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ANALYSIS OF THE LAND USE CHARACTERISTICS

DEPARTMENT OF CITY PLANNING □□□□ LOS ANGELES CALIFORNIA

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ANALYSIS OF THE LAND USE CHARACTERISTICS

Department of City Planning Los Angeles, California. march 1st, 1968

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PREFACE

Purpose

This publication is part of a series of reports issued as background information for the development of the Los Angeles Comprehension Plan. The main purpose of the series is to provide a variety to pertinent statistics and an analytical account of the physical, social, and economic character of the City and its smaller divisions.

This report provides a comprehensive picture of the way land is, and has been used in the City of Los Angeles. It represents an analysis of the City's land use patterns, population and employment densities, growth trends and land absorption characteristics. A contrast between Los Angeles and other large American cities is provided.

Sources

The comparisons in Part I are made through the use of the data and as an outline provided in a memorandum report published by Rand Corporation entitled Recent Land Use Trends in Forty-Eight Large American Cities by John H. Niedercorn and Edward F. R. Hearle.

Acknowledgment

Special acknowledgment is due to the City and Regional Planning Program at the University of Southern California and the Western Data Processing Center for assisting the City Planning Department staff in the application of electronic mapping and graphing techniques which produced the maps and graphs in Part II.

TABLE OF CONTENTS

PART I GENERAL LAND USE CHARACTERISTICS

Introduction 5

Land Use Proportions 5

Definitions
Land Use Patterns for 48 Cities Reporting Data Since 1945
Current Portions of Land Uses for Los Angeles Compared to Sample Cities

Land Use Densities 8

Population and Employment Density
Densities of Los Angeles Compared to Sample Cities

Land Absorption Coefficients 10

Conclusion 11

Appendix - List of Cities Used in the Analysis 12

PART II ANALYSIS OF THE LAND CHARACTERISTICS IN THE CITY OF LOS ANGELES

Introduction 17

Population 18

Residential Land Use 20

Commercial Land Use 21

Industrial Land Use 22

Agricultural Land Use 23

Recreation Land Use 24

Street Acreage 24

Other Developed Land Uses 25

Vacant or Underdeveloped Land 25

Conclusion 27

Appendices 28

Appendix I 28

Appendix II 29

TABLES

1. Mean Proportions of Land Devoted to Various Uses - Los Angeles Compared to 48 Large American Cities (Since 1945) 13

2. Mean Proportions of Land Devoted to Various Uses for 22 Large American Cities and the City of Los Angeles 13

3. Mean Net Urban Residential and Employment Densities Measured in Persons Per Acre Los Angeles Compared to 22 Sample Cities 14

4. Percent Changes in Mean Net Residential and Employment Densities 22 Sample Cities Compared to 12 Constant Area Cities 14

5. Land Absorption Coefficients - Los Angeles Compared to 22 Sample Cities 15

FIGURES

1. Population Density as a Percentage of Net Residential Acreage (graph)-Los Angeles 19

2. Population Density as a Percentage of Net Residential Acreage - San Fernando Valley 19

3. Multiple Dwelling Unit Frequency by Percentage within Census Tracts (graph) - San Fernando Valley 21

4. Multiple Dwelling Unit Frequency by Percentage within Census Tracts (graph) - Los Angeles City 21

MAP SECTION

Maps **36**

1. Population Density Per Gross Acre
2. Population Density Per Net Acre
3. Residential Acreage
4. Multiple Family Residential Acreage
5. Commercial Acreage
6. Retail and Service Acreage
7. Office Acreage
8. Wholesale Acreage
9. All Industrial Acreage
10. Land Demanding Industrial
11. Industrial Acreage Other than Land Demanding
12. Agricultural Acreage
13. Recreational Acreage
14. Street Acreage
15. Transportation Acreage
16. Institutional Acreage
17. Military Acreage
18. Usable Vacant Acreage

PART I

GENERAL LAND USE CHARACTERISTICS

Introduction

The rapid urbanization of the nation's population toward the large metropolitan areas has developed since World War II. Most of this growth has occurred in the suburbs rather than the central cities. It should be noted that 11 of the 12 largest cities of 1950 in the United States declined in population during the 1950-1960 period. The City of Los Angeles was the lone exception; its population increased by 509,000 or 25.8%.

As the size and density of population in Los Angeles continues to grow, observers will find both similarities and dissimilarities with other large cities in terms of land use and density patterns. Comparisons with such other cities should prove valuable in providing indications of the future growth and development of Los Angeles.

Numerous cities across the country have collected land use, population and employment information for different planning purposes. The Rand Corporation sent questionnaires to city planning departments of 63 large American cities in connection with a recent urban transportation study. Usable replies were received from 48 of these cities. Twenty-two of these 48 cities provided data over a time period, 12 of which remained constant in area. These three groups of cities are listed at the end of this part in Appendix A.

The first portion of this part will concern itself with the City of Los Angeles as a whole compared with mean proportions of land use data for the entire group of 48 reporting cities. An analysis will also be made for the 22 cities which provided land use data for two or more different years. Also, trends of selected single cities in land use densities and the amount of land brought into urban use by unit increases in population and employment will be related to the trends found in Los Angeles.

Land Use Proportions

Definitions

The land use proportions with which this analysis is concerned are arranged into six categories; residential, industrial, commercial, roads and highways, public, and vacant. Residential land includes both single and multiple family dwellings; industrial includes all industrial and manufacturing uses as well as railroads and airports; commercial includes wholesaling, retail and service uses. The public group includes schools, public buildings, parks, playgrounds, and cemeteries as well as related public and semi-public uses. Agricultural land and parking lots are included in the vacant category. These definitions are not uniform for all cities; however, they are reasonably comparable and therefore suitable for this type of land use analysis.

The land use data in the following tabulations have been computed in net terms. This means that land use quantities will refer to the actual acreage of that use and will not include the abutting streets.

Land Use Patterns For 48 Cities Reporting Data Since 1945

Table I provides comparative information on the mean proportion of land devoted to various uses in forty-eight large cities in the United States since 1945 (the latest data available ranges from 1945 to 1961) and the mean proportion of land use in Los Angeles for 1960. The table further includes comparisons excluding undeveloped land.

It should be noted that residential uses, roads and highways account for an average of approximately 65% of all the developed land in the forty-eight cities. In Los Angeles, its residential use alone accounts for about 53%, with roads and highways it approximates 73% of the total developed area. Public, industrial, and commercial comprise the remaining developed land uses. Proportionately more undeveloped land is indicated in Los Angeles than in the other cities during the post-war period. (This results in part from the substantial acreage of "new growth" areas primarily in the San Fernando Valley, and from the large amount of uninhabitable mountainous areas within the City boundaries.)

Twenty-two of the reporting cities furnished data for two or more different years, thereby permitting some determination of trends or changes in land use patterns.

In Table 2, Los Angeles is compared with the average of the 22 cities. These figures are shown for both the historical and for the more recent data. For these cities which had data for more than two years, the two most recent reported years were chosen for analysis. The two years used in the tabulations for Los Angeles are 1940 and 1960.

Table 2 shows that for the sample of 22 cities the proportions of residential and public land uses have increased relative,both,to total area and to total developed land; industrial and commercial uses have remained fairly constant, and the ratio of road and highway uses has decreased slightly. In contrast to these variations, the City of Los Angeles has experienced substantial increases in all land use categories in terms of proportions of total land. This is due primarily to the extensive development of vacant land over the past 20 years, as evidenced by the proportional change of vacant land from 64% to 31% of total land between 1940 and 1960.

Proportions of Developed Land in Los Angeles. In terms of developed land, the City of Los Angeles appears to have experienced both differences and similarities in land use proportional changes when compared to the sample cities. For example, like the sample cities, the proportion of land devoted to residential uses in Los Angeles has increased. It is significant that the residential land increased dramatically, however, from 39% to 53% for Los Angeles as compared to a small increase from 29% to 31% for the sample cities. Like the sample cities, the proportion of industrial and public land in Los Angeles remained about the same.

Commercial uses as a proportion of developed land increased from 4% to 6%, whereas it remained constant for the sample cities. Road and highway uses have proportionally decreased from 36% to 21% of developed land in Los Angeles which compares to only a slight decrease from 21% to 20% for the sample cities. The decrease in Los Angeles is explained by the extensive residential development within the last two decades. It is observed that this is in approximately inverse proportion to the residential increase. That is, while roadway uses decreased proportionally about 42%, residential land use increased proportionally nearly 36%. It is also interesting to note that the proportion of road and highway use in Los Angeles was much higher in the early period (36%) than the average of the sample (28%) whereas, for the later period, it was somewhat lower than the sample proportion, namely 21%. as compared to 25% of total developed land.

Current Proportions Of Land Uses For Los Angeles Compared to Sample Cities

Total Land Area Proportions. The recent data for Los Angeles indicate a strong shift toward the same ratios as the sample cities for total land area. For example, the proportion of total land developed in residential uses in Los Angeles increased from 14% to 36% during the last 20-year interval, which compares with the recent average of 31% residential use for the sample cities. Industrial land increased from 4% to 7% which compares to the average of 9% for the sample. Similar relationships exist for commercial, road and highway and public uses although public uses currently only represent less than one-half of the average for the sample cities. It is significant that the proportion of undeveloped land in Los Angeles (31%) remains considerably higher than the average for the sample cities (20%).

Developed Land Area Proportions. In terms of developed land, recent land use proportions in Los Angeles show differences and similarities when compared to the sample cities. Most apparent is the large proportion of residential land (53%) as compared to 39% for the sample cities.

Based on the recent data, land devoted to commercial uses was slightly higher in Los Angeles (6% compared to 5%). Uses for road and highways were surprisingly lower (21% in Los Angeles and 25% for the sample cities). In Los Angeles, public uses occupy a significantly smaller proportion of land than the mean for the 22 sample cities (11% compared to 19%).

Land Use Densities

Density is important to land use planners because it is a measure of the designed population capacity of land development. Density controls are generally based on what is considered to be in the best interest from a standpoint of public health, safety and welfare.

Before World War II, considerable emphasis was placed on residential and employment density controls to minimize the hazards of noise, fumes, traffic, and disease contagion. The post-war era has brought with it an additional purpose for controlling densities - civil defense.

The Rand Corporation report describes the development of land use densities in the larger cities as follows: "During the late 19th and early 20th Centuries, the larger cities of both the United States and Western Europe, aided by improvements in construction technology, increased rapidly in net density. However, a reversal of this trend was noted before World War II, and since 1950 falling have become widespread..."*

Population And Employment Density

The post-war trends in population and employment densities for the 22 sample cities and the City of Los Angeles are indicated in Table 3. The net density figures disclose the average number of residents or employees per acre in each of the three designated land use categories; residential, industrial and commercial. it can be observed that during the interval from the historical to recent periods residential densities within the 22 sample cities declined 15.7%, industrial densities dropped 10.5% and commercial densities fell 5.8%. In the City of Los Angeles alone,the change in the respective densities was: residential -- 38.5% decrease, industrial -- 98.7% increase, and commercial -- 46.6% decrease.

These declines are, in part, due to expansion of land area. Ten of the 22 sample cities made significant annexations during the intervening period between land use surveys. The changes in mean densities for 12 of the 22 sample cities which remained constant in area are shown in Table 4. Since Los Angeles did not remain constant in area, it is not included in the sample of 12. The effect of low density fringe areas reducing the overall densities are clearly illustrated.

Annexed land on the periphery of cities is characteristically lower in density than central areas. Hence, it is only natural to see percentage changes of residential and commercial densities less negative for constant area cities. While one might expect changes in industrial densities to also be less negative in constant-area cities, the sample shows the reverse. The Rand Corporation has explained this situation as probably due to the fact

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*John H. Niedercorn and Edward F. R. Hearle, Recent Land Use Trends in Forty-Eight Large American Cities. (The Rand Corporation, June 1963), p. 8.

"...that constant-area cities are typically older centers of manufacturing employment burdened with declining industries and obsolescent plants and equipment. The cities making annexations are younger and have a larger part of their labor force in growing industries that are making fuller use of their plants."*

As relatively little vacant land remains in most of the larger cities, the declining densities indicate that maximum levels of population and employment have been achieved or will be in the near future. Los Angeles, however, seems to be the exception as described below.

Densities For Los Angeles Compared To Sample Cities

In comparing the City of Los Angeles to other large cities, notable differences in density patterns are apparent.

Current Densities. Further, there are the differences in current densities. Residential and commercial densities in Los Angeles are roughly half of the mean net densities for the sample cities. Los Angeles has a mean residential density of 23 persons per acre as compared to 53 for the sample cities. The mean net commercial employment density is 28 for Los Angeles and 62 for the sample cities. Industrial employment density differences are not quite as extreme. Los Angeles has a density of 16 persons per acre compared with 25 for the sample cities. There are significant differences in terms of density trends also. Table 3 shows that percentage changes in mean residential and commercial net densities in Los Angeles have decreased far more than the mean for the sample cities. Industrial densities, on the other hand, have almost doubled.

Density Trends. The noticeable differences in density trends between the City of Los Angeles and other large cities are due primarily to the former's rapid growth, age, and pattern of development. Los Angeles is a young city relative to the sample cities. Its residential growth has almost entirely taken place in the suburbs, while the central city declined in density. The development until recently, has been primarily single family dwellings. Consequently, residential density has dropped much faster than other big cities. The change during recent years in residential construction from an emphasis on single-family to multiples will certainly raise densities to a level closer to the sample cities if continued. The current ratio (1964) is four multiple units built for every single-family unit.

Industrial growth is generally due to the war-time industrial expansion of the area and its subsequent change over to more dense research and development facilities. The rate of industrial growth is expected to keep pace with the population of the metropolitan area. However, as Los Angeles City becomes more congested, industry will locate more and more in the less dense fringe outside of the City.

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*Niedercorn and Hearle, op. cit., pp. 10, 11

Commercial density has declined because of its relationship to residential activity and the change in retail marketing patterns (shopping centers vs. central business districts). In this category, the decline in density may be attributed to the amount of the shopping center devoted to parking facilities. Shopping centers are continuing to grow larger and are becoming the focal points for huge commercial developments similar to downtown areas.

Land Absorption Coefficients

The land-absorption rate is an important tool for estimating the upper limits of the City's population and employment growth using the present trends and densities. A land-absorption coefficient is defined as the amount of land brought into urban use by an increase in population or employment of one person. Land-absorption coefficients for the cities have been computed by correlating land use changes in the cities with the changes in population, manufacturing employment and commercial employment in those cities.

Table 5 shows the land-absorption coefficients by land use categories. Changes in population and employment account for variations in the proportions between land use categories. The roads and highways and public uses are affected very little by the changes in population and employment. This is probably because these improvements were substantially completed many years ago.

The comparative deviations for Los Angeles are a product of the City's growth. Los Angeles' development has expanded faster than other large cities for two reasons: (1) Population is growing faster; and (2) the land is being used up faster -- that is, the land-absorption coefficients are greater in this City than the average for the sample cities. Generally, Los Angeles uses up approximately 10% to 15% more land per person for each land use category than the sample rate for the 22 large cities. The exceptions are for commercial land use which uses 32% more land per person and roads and highways which uses 17% less land per person.

The reciprocals indicate the densities at which new development is occurring by persons per acre. Most of the increases in population and employment are the result of development at both the periphery of the city and/or other pockets of vacant usable land within the city; the reciprocal of land-absorption coefficients are far below the average net densities. The lower reciprocal figures may be expected because new development in the fringe areas is generally a much lower density than the existing developed areas in and near the city center.

Assuming little or no annexations with the present rate of land-absorption in the City of Los Angeles, all of the vacant land currently within the City, will theoretically be used by the 1980's. Yet, with a change in land use density this would not happen. As vacant land becomes scarce, density would increase on the land already developed. Thus, as single family uses change to multiple uses due to the demand for dwelling units, for example, the land-absorption coefficient would then decrease.

Conclusion

Part I has discussed the overall analysis of Los Angeles with trends found in other large cities in the United States. An attempt has been made to study the juxtaposition of the City's land use patterns, population and employment densities, and land-absorption coefficients with those of the large American city in general. In concluding Part I, a few summary statements shall be made.

First, vacant urban land is rapidly disappearing in all large cities and particularly in Los Angeles. Second, net population and commercial employment densities have decreased faster in Los Angeles than the average of other large cities. While manufacturing in Los Angeles has almost doubled its net density over a small original density during the base period, the average of other large cities showed a decrease. Third, at present densities, the theoretical upper limits of Los Angeles' population may be reached as vacant land is used up, however, residential density will continue to increase in order to accommodate in-migration and natural increase.

A final explanation about the data is in order. The preceding comparisons between Los Angeles and other large cities should not be used as standards in any way. The data found in this chapter for other cities are mean. In comparing Los Angeles to these averages, it must be understood that the individual city will invariably have different and special characteristics of its own and will not follow all trends. Therefore, restraint should be used in drawing specific conclusions.

APPENDIX

LAND USE DATA

List of Cities Used In The Analysis

48 Cities

- Albany
- Baltimore
- Birmingham
- Boston
- Buffalo
- Chicago
- Cincinnati
- Cleveland
- Columbus
- Dallas
- Dayton
- Detroit
- Ft. Worth
- Hartford
- Jersey City
- Kansas City
- Long Beach
- Los Angeles
- Louisville
- Memphis
- Miami
- Minneapolis
- New Orleans
- New York
  - Bronx
  - Brooklyn
  - Manhattan
  - Queens
  - Richmond
- Newark
- Oakland
- Oklahoma City
- Phoenix
- Pittsburgh
- Portland
- Portsmouth
- Providence
- Rochester
- St. Louis
- St. Paul
- Sacramento
- San Antonio
- San Diego
- San Francisco
- San Jose
- Seattle
- Syracuse
- Washington, D.C.
- Youngstown

22 Cities

- Boston
- Buffalo
- Chicago
- Cincinnati
- Cleveland
- Dallas
- Dayton
- Detroit
- Long Beach
- Los Angeles
- Miami
- Minneapolis
- New York
- Newark
- Oklahoma City
- Pittsburgh
- Portsmouth
- Providence
- St. Louis
- San Antonio
- San Francisco
- Seattle

12 Cities

- Boston
- Buffalo
- Cincinnati
- Cleveland
- Detroit
- Miami
- Minneapolis
- New York
- Newark
- Pittsburgh
- Providence
- St. Louis

TABLE 1: MEAN PROPORTIONS OF LAND DEVOTED TO VARIOUS USES
LOS ANGELES COMPARED TO 48 LARGE AMERICAN CITIES (SINCE 1945)

TYPE OF USE	48 Large Am'n Cities*	L. A.	48 Large Am'n Cities*	L. A.
Total Developed	77.0	69.0	100.0	100.0
Residential	29.6	36.3	39.0	52.6
Industrial	08.6	06.6	10.9	09.6
Commercial	03.7	04.2	04.8	06.1
Road & Highway	19.9	14.4	25.7	20.8
Public	15.3	07.4	19.7	10.8
Undeveloped	23.0	31.0		

* Includes City of Los Angeles

TABLE 2: MEAN PROPORTIONS OF LAND DEVOTED TO VARIOUS USES
FOR 22 LARGE AMERICAN CITIES* AND THE CITY OF LOS ANGELES

	Sample of 22 Cities		Los Angeles City		Sample of 22 Cities		Los Angeles City	
	Historical	Recent	Historical	Recent	Historical	Recent	Historical	Recent
Total Developed	.756	.784	.355	.690	1.000	1.000	1.000	1.000
Residential	.290	.310	.137	.363	.385	.398	.387	.526
Industrial	.085	.085	.037	.066	.110	.104	.103	.096
Commercial	.041	.040	.014	.042	.053	.050	.042	.061
Road & Highway	.207	.109	.129	.144	.279	.254	.362	.208
Public	.133	.152	.038	.074	.174	.193	.107	.108
Total Undeveloped	.245	.216	.640	.310				

* These 22 cities include Los Angeles.

NOTE: The dates of the land use surveys taken in the respective cities are not the same in both of the time ranges ("historic" and "recent"). While this may include some statistical bias, grouping in this manner does provide some indication of what is happening in the large urban areas.

TABLE 3:

MEAN NET URBAN RESIDENTIAL AND EMPLOYMENT DENSITIES MEASURED IN PERSONS PER ACRE LOS ANGELES COMPARED TO 22 SAMPLE CITIES*

	Sample of 22 Cities			Los Angeles City		
Land Use	Historical	Recent	% Change	Historical	Recent	% Change
Residential	63.23	53.32	-15.7%	37.87	23.29	-38.5%
Industrial	28.42	25.44	-10.5%	8.01	15.89	+98.7%
Commercial	65.80	62.01	5.8%	53.23	28.42	-46.6%

* These 22 cities include Los Angeles.

TABLE 4:

PER CENT CHANGES IN MEAN NET RESIDENTIAL AND EMPLOYMENT DENSITIES 22 SAMPLE CITIES COMPARED TO 12 CONSTANT AREA CITIES

Land Use	22 Cities	Los Angeles	12 Cities
Residential	-15.7%	-38.5%	-12.4%
Industrial	-10.5%	+98.7%	-14.8%
Commercial	- 5.8%	-46.6%	+ 0.6%

TABLE 5: LAND ABSORPTION COEFFICIENTS (ACRES PER PERSON)
LOS ANGELES COMPARED TO 22 SAMPLE CITIES*

	Population		Manufacturing Employment		Commercial Employment		Reciprocal of Absorption Coefficient (Persons Per Acre)	
Land Use	22 Cities	Los Angeles	22 Cities	Los Angeles	22 Cities	Los Angeles	22 Cities	Los Angeles
Residential	.059	.068					16.94	14.61
Industrial			.034	.039			29.41	25.42
Commercial					.047	.062	21.27	16.05
Roads and Highways	.006	.005					166.66	198.33
Public	.010	.011					100.00	90.29
Total Developed	.091	.102					10.99	9.79

* Including Los Angeles

PART II

ANALYSIS OF THE LAND CHARACTERISTICS IN THE CITY OF LOS ANGELES

Introduction

This portion of the statistical profile of the City of Los Angeles is an introspective study made for the purpose of examining the different patterns of land uses in the many areas of the City. Through this microcosmic review a better understanding of composition, concentrations, and possible trends should develop.

Part II will make certain comparisons between geographic areas and communities within the City. The City is broken-up both by topography and municipal boundaries, as well as by many economic and social characteristics. The areas referred to more frequently will be the San Fernando Valley, Central Los Angeles, and the Statistical Areas of the City which are generally known by their community names.

The source of the land use data is the Los Angeles Regional Transportation Study base information compiled by the City of Los Angeles in 1960. This information has been tabulated and mapped through the use of electronic data processing equipment.

In the following analysis, this information will be discussed in the following order; population density, residential, commercial, industry, community services, transportation, military, and open land uses.

Definitions

Some of the terms in the following discourse may or may not be obvious in their meaning. The following definitions are given to avoid any misinterpretations.

Net total developed land. The phrase "net total developed land," "net developed area," or "net developed acreage" refers to that land within the City which does not include vacant usable, vacant non-usable, agricultural, or street acreage.

Total developed land. The difference between "net total developed land" and "total developed land" is that street acreage is included while vacant usable, vacant non-usuable, and agricultural acreages are excluded.

Multiple family acreage. The type of land use designated as multiple family land use.

Net residential acre. Population density by net residential acre is a measure of persons per residentially used acre excluding streets.

Central city core area. Generally the entire central city area excluding the area east of Los Angeles River and area south of Slauson Boulevard.

Gross acreage. The population density by gross acres is a general analysis dividing population by total acreages within the City. A more detailed study of population is the distribution of population by net residential acre.

Population

The City of Los Angeles has developed a large urban population which has a peculiar consistency all its own. While the population of the large cities in the United States has grown tremendously, the growth in the 1950 to 1960 period has mostly been in the suburbs. Los Angeles' growth during the past 20 years has been,for the most part,in the periphery of the City. The high concentration of population in the central city area has not developed to the high densities as have other large cities. Thus, Los Angeles does not have the extreme high-low density distribution that can be found in other large cities. The 632 census tracts in the City range in population density per gross acre from a census tract with the lowest extreme of no population to a census tract with sixty people per gross acre.

The central or downtown portion of Los Angeles is the most concentrated population area, and this population density radiates in less dense concentric rings from the core. The Downtown, Westlake, and Wilshire Statistical Areas are the most compact communities in the City when density is figured in gross acres. There are other nodes of population concentration in different parts of the Central City ranging between 35 and 60 persons per gross acre. These smaller nodes can be found within the Venice, Boyle Heights, Hollywood, West Wilshire, Watts and Baldwin Hills Statistical Areas. (See map 1.)

The San Fernando Valley differs in population density from the rest of the City, in that there seems to be no real population concentration of any significant size. This may be expected to change as the Valley continues to develop. The population distribution by both gross acre and net residential acre in some areas reveals a concentric ring appearance similar to that in other cities. However, Los Angeles has not developed the highly concentrated core that can be found in larger older cities.

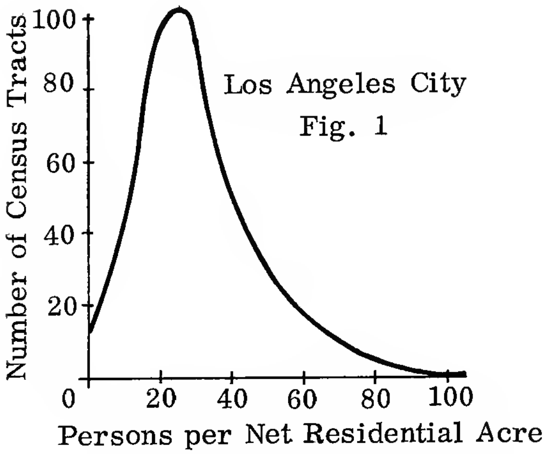
The Central City having the highest density, has its most dense census tracts located in, or adjacent to, the Downtown Statistical Area. Population by gross acre locates the center of population slightly to the west when compared with the center located by net residential acre. Net residential acreage locates the heaviest population concentration in the heart of the Los Angeles Central Business District. This can be attributed to the small amount of residentially used land and the large number of people reported living there. Hotels and motels are included within the residential land use category. The census tract with the highest density contained 210 people per net residential acre while the most typical or average tract contained 24 persons per net acre for the City as a whole. *

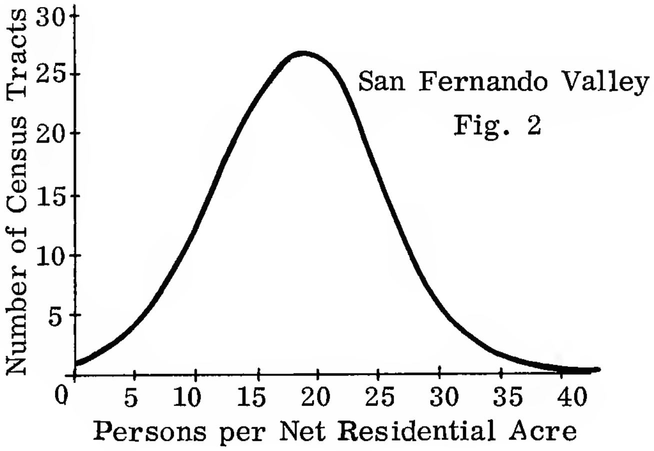
*This is low when a comparison is made with the City of New York which has extreme census tract densities that range in population density as high as 450 persons per gross acre (almost eight times greater than Los Angeles).

Upon separating the San Fernando Valley from the rest of the City, the distribution of population density by census tract takes on a different picture. The frequency array of population by census tract for the whole City is positively skewed (the longer tail toward the higher densities).

In the Valley the distribution is almost a normal bell shaped curve. This is primarily a result of the fact that the San Fernando Valley does not have areas of intense population density. The Valley in this respect is a more homogeneous area than the City; i.e., the housing pattern is evenly distributed around an average density. (See Figures 1 and 2.)

POPULATION DENSITY AS A PERCENTAGE OF NET RESIDENTIAL ACREAGE





There are a few nodes spotted throughout the City which are significantly high in population density. In West Los Angeles the attraction of UCLA results in a population density between 80 and 110 persons per net residential acre. Some of the other areas with this same population density range include; Venice, West Wilshire, Hollywood, and Watts.

The San Pedro Area is the farthest area from the Central City with a relatively high population density. One of its census tracts contains 80 persons per net residential acre. The areas with the lowest population densities (per net residential acre) are located primarily in the San Fernando Valley and the Santa Monica Mountains.

Residential Land Use

Almost half of the land in the average census tract is devoted to residential use. An analysis of the frequency distribution of residential acreage by percent is negatively skewed (the longer tail toward the lower percentages). This holds true for the whole City as well as for any of its four geographic areas and is indicative of the predominance of residential land use. In approximately half of the City's census tracts, residential land use constitutes between 55% and 70% of the total. About one of every ten tracts have 70% of their area in this residential category.

The areas in the City with a high percent of residential use are not generally found to be areas of high population density. Census tracts with a large portion of their developed area devoted to residential use (over 55%) tend to be found in terrain with an excess of 10% slope. Those areas with concentrations of commercial and industrial uses generally have a smaller percent of residential land use. Frequently areas with the smallest percentage of residential land use are found in census tracts with dense population. (See map 3.)

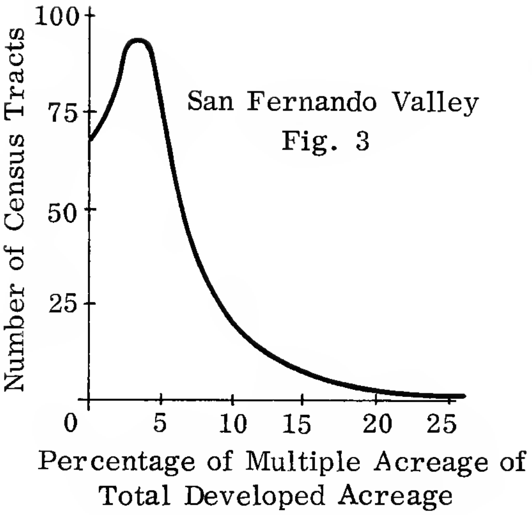
The consistently varied pattern of residential land use throughout the City depends, in large measure, upon the proximity and character of other uses. The sectors of industrial use (land used 20% or more for industrial purposes) appear to have the effect of excluding residential use in the census tracts involved.

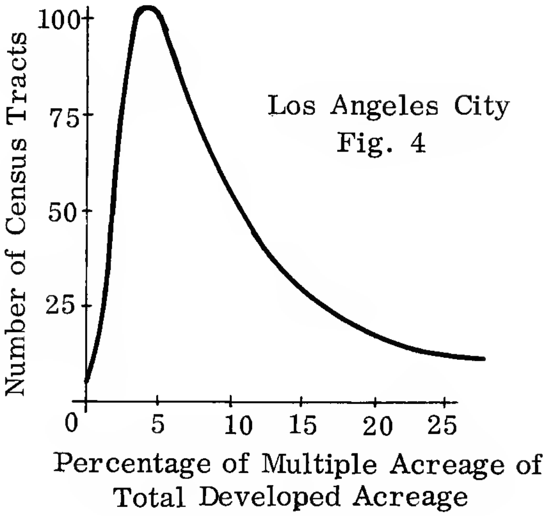
Multiple family. Acreage used for multiple family dwellings is found predominately in the Central City west of downtown business district. Although multiple units exist in most parts of the City, they comprise less than 10% of the residential acreage. There are 34 census tracts within the City where multiple units dominate as a residential use 50% or more of the total residential acreage). They can be found mainly in such community areas as Downtown, Westlake, Wilshire, and West Wilshire. Other areas of multiple housing concentration are located in Baldwin Hills, Westwood, San Pedro, and Watts.

The pattern of multiple land use is similar to the population density pattern by net residential acre which indicates the strong correlation that exists between population density and the location of multiple units.

The following graphs indicate the relatively low population density of the San Fernando Valley as compared with the Central City. The latter devotes 22% of its acreage to multiple use in contrast to 3% utilized for that purpose in the San Fernando Valley.

MULTIPLE DWELLING UNIT FREQUENCY BY PERCENTAGE WITHIN CENSUS TRACTS





Commercial Land Use

Land used for commercial purposes includes retail, services, wholesale and office uses. Commercial land use represents approximately 6% of the total developed land in the City. In the downtown area, seven census tracts have more than 50% of the land used for commercial purposes as contrasted to the San Fernando Valley where the highest concentration was 22% commercial use in but one census tract. (See map 5.)

The ratio of commercial acreage to total developed acreage for the whole City is 1 to 17. In the San Fernando Valley, this ratio changes to one commercial acre out of every 40 developed acres. The latter is primarily caused by the lower population density of the Valley; its commercial trade areas must be larger to include adequate buying power. However, this ratio might indicate a greater reliance on the Central City commercial acreage than the public realizes. The reliance is quite strong in the form of office and wholesale uses.

The overall pattern of commercial acreage has a concentric ring appearance similar to the distribution of population density by net residential acre. For the most part this may be attributed to the distribution of retail and service uses which comprises 61% of the total commercial acreage.

Retail and Services. The heaviest concentration of retail and service acreage is located in the Central Business District. Other retail concentrations are those areas containing the major shopping centers and other major business districts. Generally the census tracts of higher commercial density pin-point the foci of the different homogeneous communities. (See map 6)

The general distribution of the retail and service concentrations coincide with the total commercial concentrations which indicates that the retail and service activity has a strong magnetic effect of drawing other commercial activity to these centers or that the centers themselves attract retail and service businesses more strongly than other businesses.

Office Acreage. The Downtown Statistical Area in Central Los Angeles contains the largest single concentration of the office acreage in the City, about 10% or some 135 acres. Office acreage, as a percentage of the developed acreage is also concentrated to a lesser extent on Wilshire Boulevard, as it extends from the CBD; along Hollywood and Sunset Boulevards; and near the Los Angeles International Airport. (See map 7)

Most American cities have a concentration of office buildings in the central business district and,to a large degree,this was true of Los Angeles too. But office construction was in the doldrums from 1930 to 1960 in the CBD while Wilshire Boulevard attracted new office buildings. Around 1960 the CBD began to revive and downtown Los Angeles is now developing an impressive skyline of giant office structures.

Wholesale Acreage. The pattern of density between commercial acreage in general and that of wholesale acreage is readily evident. (See map 8.) The heaviest concentration of wholesale acreage is in Central Los Angeles, mainly in the Wholesale-Industry Statistical Area. Twenty per cent of this Statistical Area is devoted to wholesale use and 17.5% of all the wholesale acreage is located in this area. The distribution of wholesale land use bears some similarity to the general pattern of industrial land use densities.

Industrial Land Use

The Los Angeles Regional Transportation Study defines industrial acreage in rather broad categories. These categories are divided into two groups -- "land-demanding" industrial acreage and "other-than-land-demanding". Included within the land-demanding group are such uses as those found in heavy industrial use (e.g., petroleum refining, steel foundries, quarrying, chemical plants, and electrical or gas distribution stations) and those uses normally considered to be public utilities (e.g., water storage reservoirs, sewage treatment plants, rubbish disposal sites, and communication facilities). The "other than land demanding industrial" category pertains to all other industrial land uses not falling into the land demanding group described above. These other industrial uses are those concerned with lighter manufacturing (e.g., garment and apparel industries of all types; electrical, pharmaceutical, photographic, food product, light metal working, and heavy service industries - such as laundry and dry cleaning plants).

Land Demanding Industrial Acreage. The census tracts with a heavy percentage of industrial use (over 20% of the developed acreage) are spotted in various parts of the City. The only census tract almost entirely devoted to industrial use (96%) is located in the Dominguez Statistical Area. Two other census tracts with high percentages of industry are in the Wilmington Statistical Area with 55% and 61% of their developed area in land demanding industrial use. Other census tracts with major industrial concentrations (between 30% and 46% of the developed area) are primarily located in the San Pedro, Harbor City, Torrance, Venice, Sun Valley, Hollywood, Wholesale-Industry, and West Los Angeles. However, in such statistical areas as Sylmar, Chatsworth, and Beverly Crest the higher percentage of industrial use is caused (at least in part) by the presence of water reservoirs in those areas, which are included as industrial uses.

Both the general "all industrial acreage" (see map 9) and the "land demanding industrial acreage" (see map 10) do not seem to have a particular pattern. In part, this is a result of the need to locate near their resources, transportation facilities, or where there are large parcels of undeveloped land for their needs.

Other than Land Demanding Industrial Acreage. Industrial uses of the "other than land demanding" type seem to have a pattern which radiates from the Central City. The pattern appears to be a combination of the concentric ring sector, and multiple nuclei shapes with the Central and Wholesale-Industry Statistical Areas at the center. (See map 11.) In the outlying areas industrial land use is concentrated along railroad lines for the most part. Other nucleations are around the International Airport and San Pedro Harbor; also in the western part of the San Fernando Valley where a substantial amount of research and development type of industry has been established. The only other kinds of industrial concentrations which seem to have developed in the City are associated with the oil industry in Torrance, and the movie industry which is spotted in various nodes around the City.

Agricultural Land Use

Agricultural acreage could still be found in 1960, mostly in the San Fernando Valley portion, as indicated on map 12. The greater portion of this agricultural land acreage is located in the western and northern part of the Valley, especially in certain census tracts located in the Sepulveda Flood

Control Basin and in the Canoga Park and Chatsworth areas which all have between 45% and 70% of their area devoted to agriculture. The absorption of this undeveloped acreage (to an urban type use) was mentioned previously in Chapter I. Agricultural land is also mentioned in connection with its open land aspects under the heading of "Vacant and Undeveloped Land."

Recreation Land Use

Standards for recreational acreage recommend that a minimum of 10% of the total developed land should be reserved for that use.* Based upon the developed area (including street acreage and excluding agricultural and vacant land), the recreational land available is approximately 7% of the net total developed acreage in the City which indicates a deficiency.

Some of the most dominant recreational areas (census tracts containing above 60% in recreational use on map 13 include such large recreation uses as Griffith Park, Elysian Park, Dodger Stadium, and the United States Forest Preserve. Other areas with high percentages of recreational use generally are those census tracts which include golf courses and country clubs. However, some difficulty arises in using the LARTS category because of the fact that their classification includes cemeteries as a recreational use which means that the City has a larger recreational deficit than the above mentioned 7% indicates.

Street Acreage

Street acreage constitutes 20% of the net total developed land. The heavier land use densities with over 25% of the area used for streets and highways are found either in the older developed areas or in those census tracts in which a freeway is dominant due to the small size of the tract itself. In some lightly populated census tracts in new growth areas of the City, there are instances where the percentage of land in streets and highways rises above the 25% level because these facilities have been improved in advance of residential development. In one case a census tract in the Santa Monica Mountains is 100% developed in streets because it is devoid of any other uses.
(See map 14.)

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*A standard used by the Local Planning Administration, International City Manager's Association, 1959.

Other Developed Land Uses

Some of the other land uses which were categorized in the LARTS land use study are Transportation, Institutional, and Military. Each of these land uses has its own peculiarities of location and distribution throughout the City.

Transportation. Transportation land use is about 3% of the total developed acreage in the City. Few areas contain a noticeable amount of transportation acreage except those census tracts where railroad lines are located and special transportation facilities (i.e., airports, railroad yards and harbor).

Areas with particularly high concentrations are located as follows: in the Van Nuys Statistical Area (the Van Nuys Airport); in the North Hollywood-Sunland area (the Lockheed Air Terminal); in the Pacoima area (the Whiteman Air Park); in the Atwater Statistical Area (the Southern Pacific railroad yards); in the Central City, especially the Wholesale and Boyle Heights Statistical areas (the Southern Pacific main freight yards and shops, and the Union Station passenger terminal); and in the San Pedro-Wilmington area (the harbor facilities). The Westchester Community has the highest percentage of its total developed area devoted to transportation, approximately 37%; and the greatest amount of actual transportation land area, 2,352 acres. This concentration is caused by the land demands of the Los Angeles International Airport.

Institutional. Institutional acreage is concerned with such land uses as: schools, and education establishments; cultural establishments - charitable and social agencies; health agencies - hospitals, sanitarium homes, and security institutions - fire, police, and prisons. It is sporadically distributed throughout the City with several major concentrations. Approximately 4% of the City's developed land is devoted to institutional uses. The presence of educational establishments, primarily colleges and universities, is responsible for the heavier concentration in many census tracts. (See map 16.)

Military. The City does not have a large amount of land directly devoted to military use, about 0.5%. In the Harbor area there are naval yards as well as an army military post, Fort MacArthur. Other areas indicate the presence of small amounts of military acreages such as armories and military training sites within certain census tracts.

Vacant or Underdeveloped Land

The vacant land category is that land which either had not been developed or was not in any use as of 1960. There are two vacant or undeveloped land classifications; namely vacant usable and vacant non-usable. Vacant land is located generally in the San Fernando Valley and the mountainous areas (areas with over 10% slope) of the City. As a whole, the City of Los Angeles contains 25% vacant usable land and 1.3% vacant non-usable, for a total of 77,731 acres in 1960.

While some 12,770 acres of agricultural exists (12,252 acres in the San Fernando Valley) it is also possible to consider this type of land use as undeveloped acreage for urban purposes. This is due to the fact that it converts as readily as vacant land to urban uses. Agricultural and vacant land use are both categorized as open land. Agricultural land itself has been discussed previously under its own heading.

Vacant Usable. This subcategory refers to any land which could be used in some manner but was vacant at the time of this survey. There are 257 of the City's 632 census tracts which do not have any vacant usable land. The San Fernando Valley contains approximately 40,500 acres or 54% of all of the usable vacant land in the City, some 8,000 acres of which are in the Santa Monica Mountains. The amount of vacant usable land in the total Santa Monica Mountains, including that portion of the San Fernando Valley, comes to 47,000 acres or 64% of the whole City. Those census tracts on the southern slope of these mountains, west of the San Diego Freeway, are between 75% and 100% vacant (containing 30% of all vacant usable land).

Noticeable amounts of vacant land in other areas are widely scattered. Few census tracts, regardless of size, have more than 40% vacant land, and only in the El Sereno Statistical Area does a census tract exceed this percentage to the extent of containing 64% vacant usable land.

Vacant Non-Usable. Vacant non-usable land is largely self-explanatory, in that the land is not usable for any purpose due to steep mountainous slopes, river beds, settling basins, etc. This area as reported through the land use study is only 1.3% (3,842 acres) of the total.

Open Land. The open land category including agriculture, vacant usable, vacant non-usable represents almost 31% of the total (90,500 acres). The location of the open land indicates that the general trend of development of new and undeveloped areas will take place primarily in two particular areas; the Santa Monica Mountains, the western and northern parts of the Valley, and Sunland Tujunga. Other areas which have some open acreage of lesser concentrations are east of the Central City, the area around the Marina Del Rey, and the Harbor area.

Conclusion

The conclusions developed in Part II are as varied as the different land uses which have been examined. One general impression which can be drawn from this analysis is that the City is still quite a fledgling considering the densities found in the Central City Core. The type or residential unit which most prominently represents the City is the single-family dwelling. Yet, in recent years more multiple family dwellings have been built than single units (at a ratio of approximately 4 to 1 since 1960).

The general city form patterns of Los Angeles in some instances follow the classic forms of concentric zones (mainly east Los Angeles), sectors (toward the mountains, toward the sea), and even multi-nuclei (harbor, airport) but its form is still uniquely related to both transportation and its mountainous terrain. The early electric interurban and the later automobile stretched and sprawled Los Angeles; the harbor site led to the "shoestring" shape. All of these had their effects on the intensity and type of land uses.

Some of the individual land use findings were expected while others were not as evident. It was surprising to find in analyzing the shape of the frequency distribution curves for the separate land uses that there was as much similarity between the different geographic areas and the total City. This was generally true except for the population density and multiple dwelling unit curves, or the percent of development.

Other highlights more pragmatic in nature are that commercial acreage in the downtown area is symbolized primarily by the heavy concentration of offices. However, other concentrations of office space have added significant office centers elsewhere in the City. Industrial uses which are not the land-demanding type are the only industrial uses which appear to follow any type of development pattern. The analysis points out such things as a deficiency in recreational acreage and areas which portend further absorption of agricultural and vacant land.

On the following pages, selected appendices are presented which supply land use information generally for the total City and for the Communities by detail land use classifications.

Appendices

The two appendices supplied here are concerned with the general land use acreage figures for the total City of Los Angeles and for the sixty-four communities within the City. In the first appendix, the land use acreage for the total City is divided into nine general categories with two proportional analyses -- (1) by percent of developed acreage alone, and (2) by percent of total acreage. The percentage of the developed acreage by itself indicates more closely the actual makeup of the City's urban area.

A more detailed analysis of the land use categories can be found in the second appendix. The individual communities in the City are described in detail by sixteen different types of land use classifications. The raw acreage figures supply the basic data necessary for a separate synopsis of land use information in any one of the communities by itself.

Appendix I

CITY OF LOS ANGELES GENERAL LAND USE ACREAGES AND PERCENTAGES

	Acres	% of Developed	% of Total
Residential	106,221	52.5	36.2
Commercial	12,396	6.1	4.2
Community Services	21,125	10.4	7.2
Industrial	13,775	6.8	4.7
Transportation	5,780	2.9	2.0
Military Installations	1,106	0.5	0.4
Streets	42,130	20.8	14.4
		100.0	
Vacant	77,731		26.5
Agricultural	12,770		4.4
	293,034		100.0

Appendix II

SAN FERNANDO VALLEY L.A.R.T.S. PROGRAM AREA IN ACRES BY LAND USE - 1960

		Residential		Commercial				Community Services	
Community	Total Acreage	Singles	Mult.	Retail	Whsl	Offc	Pkg	Inst.	Recreation
Canoga Park	9,609	3,685	25	142	28	10	11	318	21
Chatsworth	10,645	2,200	0	42	7	1	4	28	34
Encino-Tarzana	10,066	3,333	14	177	7	4	3	111	225
Granada Hills	6,514	2,642	5	80	0	1	0	144	12
North Hollywood	8,576	4,128	441	392	104	42	59	195	352
Northridge	3,792	1,711	20	46	44	0	15	129	27
Pacoima	8,438	3,532	37	159	43	0	12	191	90
Reseda	5,980	3,514	26	219	4	12	14	325	63
Sepulveda	4,507	2,464	26	117	13	4	30	280	15
Sherman Oaks	4,194	2,071	129	115	5	19	8	31	0
Studio City	4,705	2,006	87	127	4	13	27	28	20
Sunland	6,522	1,540	8	49	5	1	0	60	822
Sun Valley	12,123	2,840	31	121	100	1	2	168	32
Sylmar	14,804	2,306	13	65	11	10	0	371	230
Tujunga	5,983	1,214	46	55	3	2	0	48	2,704
Van Nuys	13,322	5,653	328	524	155	66	71	504	411
Woodland Hills	7,858	2,231	10	78	2	0	2	245	24
TOTAL	137,638	47,070	1,246	2,508	535	186	258	3,176	5,082

SOUTHERN LOS ANGELES

Community	Total Acreage	Singles	Mult.	Retail	Whsl	Offc	Pkg	Inst.	Recreation
Dominguez	290	0	0	0	0	0	0	0	0
Gardena	1,783	580	23	31	19	6	0	70	88
Harbor City	1,367	252	49	43	12	5	1	137	286
San Pedro	6,117	1,655	200	142	176	25	45	269	195
Torrance	1,088	392	31	19	3	2	0	5	6
Wilmington	6,701	953	99	222	124	26	36	83	29
TOTAL	17,346	3,832	402	457	334	64	82	564	604

Appendix II (Cont.)

SAN FERNANDO VALLEY L.A.R.T.S. PROGRAM AREA IN ACRES BY LAND USE - 1960

		Industrial					Open Land		
Community	Total Acreage	Land Demand	Other	Transp	Mil Instl	Agric	Vacant Useable	Vacant Nonuse	Street
Canoga Park	9,609	24	89	38	0	1,812	1,966	141	1,299
Chatsworth	10,645	1,283	136	78	0	2,971	3,095	53	713
Encino-Tarzana	10,066	90	0	22	0	334	4,787	50	909
Granada Hills	6,514	81	0	0	0	1,114	1,426	42	967
North Hollywood	8,576	243	154	167	0	75	432	104	1,688
Northridge	3,792	58	13	27	0	477	703	42	480
Pacoima	8,438	176	123	162	0	608	1,319	692	1,294
Reseda	5,980	36	2	23	0	43	397	113	1,189
Sepulveda	4,507	2	48	6	0	208	531	39	724
Sherman Oaks	4,194	1	0	0	0	0	1,188	21	606
Studio City	4,705	38	4	0	0	13	1,689	76	573
Sunland	6,522	153	1	1	0	279	2,948	249	406
Sun Valley	12,123	886	83	150	0	227	6,164	225	1,093
Sylmar	14,804	643	25	71	0	2,313	7,604	16	1,126
Tujunga	5,983	48	0	0	0	26	1,593	27	217
Van Nuys	13,322	181	491	617	28	1,187	754	211	2,141
Woodland Hills	7,858	6	21	0	2	565	3,835	11	826
TOTAL	137,638	3,949	1,190	1,362	30	12,252	40,431	2,112	16,251
				SOUTHERN LOS ANGELES					
Dominguez	290	277	0	0	0	0	0	0	13
Gardena	1,783	155	51	8	1	10	273	43	425
Harbor City	1,367	248	16	12	0	40	60	0	206
San Pedro	6,117	367	61	151	698	17	711	424	1,018
Torrance	1,088	112	209	25	0	6	115	3	160
Wilmington	6,701	2,210	91	311	360	16	788	448	905
TOTAL	17,346	3,369	428	507	1,059	89	1,947	918	2,727

Appendix II (Cont.)

CENTRAL LOS ANGELES L.A.R.T.S. PROGRAM AREA IN ACRES BY LAND USE 1960

		Residential		Commercial				Community Services	
Community	Total Acreage	Singles	Mult.	Retail	Whsl	Offc	Pkg	Inst.	Recreation
Atwater	1,218	438	19	18	15	4	1	11	0
Avalon	2,293	1,141	96	109	30	6	2	80	50
Baldwin Hills	1,286	435	228	50	6	5	9	44	0
Boyle Heights	4,251	1,338	257	147	203	32	27	263	152
Central	1,310	442	38	99	109	3	29	26	1
Downtown	1,004	57	37	197	19	135	141	38	7
Eagle Rock	2,272	1,138	25	47	4	7	8	129	45
El Sereno	3,087	1,315	34	50	20	4	1	120	11
Elysian Park	2,341	695	54	32	10	2	8	57	605
Exposition Park	3,183	1,592	209	202	28	11	43	111	69
Glassell	2,000	931	22	38	23	5	10	41	195
Green Meadows	5,076	2,609	151	265	93	10	10	133	29
Griffith Park	4,792	435	45	21	59	3	0	13	3,397
Highland Park	2,683	1,378	61	65	8	9	4	79	236
Hollywood	9,293	2,922	767	486	63	94	85	268	870
Leimert	2,573	1,513	140	130	11	10	5	68	8
Lincoln Heights	2,276	804	48	93	77	13	6	72	54
Mount Washington	1,495	622	11	22	11	2	0	37	8
Santa Barbara	2,458	1,199	241	148	22	16	16	147	59
Silver Lake	2,333	1,317	128	64	12	14	7	56	0
South Vermont	3,673	2,017	94	219	13	16	12	114	32
University	1,277	255	103	166	63	22	77	97	6
Watts	1,255	654	136	43	12	4	11	75	3
West Adams	3,484	1,762	334	168	48	11	16	108	28
West Hollywood	3,130	1,492	70	50	3	10	0	6	0
Westlake	1,983	529	316	206	20	80	85	78	31
West Wilshire	1,968	760	321	180	7	48	16	41	59
Wholesale	2,153	23	27	193	429	33	53	16	0
Wilshire	3,540	1,519	548	311	16	81	30	141	57
Wilshire-West Pico	2,237	1,134	244	141	6	23	18	46	1
TOTAL	81,924	32,466	4,804	3,960	1,440	713	730	2,515	6,013

Appendix II (Cont.)

CENTRAL LOS ANGELES L.A.R.T.S. PROGRAM AREA IN ACRES BY LAND USE - 1960

Community	Total Acreage	Industrial		Transp	Mil Instl	Agric	Open Land		Street
		Land Demand	Other				Vacant Useable	Vacant Nonuse	
Atwater	1,218	11	43	194	0	0	170	104	190
Avalon	2,293	97	139	24	0	0	5	0	514
Baldwin Hills	1,286	39	23	0	0	0	165	0	282
Boyle Heights	4,251	159	237	236	8	0	81	49	1,062
Central	1,310	30	155	28	0	0	43	0	307
Downtown	1,004	6	43	0	0	0	21	0	303
Eagle Rock	2,272	22	6	1	0	0	473	0	367
El Sereno	3,087	38	51	49	0	0	925	0	469
Elysian Park	2,341	3	9	10	0	2	416	40	398
Exposition Park	3,183	3	43	12	0	1	2	0	856
Glassell	2,000	13	97	10	0	0	241	0	374
Green Meadows	5,076	146	170	20	0	0	36	7	1,397
Griffith Park	4,792	65	76	0	1	41	108	180	348
Highland Park	2,683	10	14	11	0	0	238	21	549
Hollywood	9,293	266	72	5	6	33	1,698	6	1,652
Leimert	2,573	16	25	7	0	0	1	0	639
Lincoln Heights	2,276	32	98	20	0	0	476	51	432
Mount Washington	1,495	14	14	50	0	0	433	20	251
Santa Barbara	2,458	0	34	7	0	0	14	0	555
Silver Lake	2,333	137	8	0	0	0	65	0	525
South Vermont	3,673	55	64	2	0	0	9	0	1,026
University	1,277	1	78	5	0	0	48	0	356
Watts	1,255	8	11	23	0	0	22	0	253
West Adams	3,484	39	78	14	0	0	29	4	845
West Hollywood	3,130	2	4	0	0	0	1,133	0	360
Westlake	1,983	19	23	6	0	0	8	0	582
West Wilshire	1,968	24	17	4	0	2	11	0	478
Wholesale	2,153	226	269	316	0	0	55	69	444
Wilshire	3,540	2	16	0	0	0	14	0	805
Wilshire-West Pico	2,237	4	10	4	0	0	10	0	596
TOTAL	81,924	1,487	1,927	1,058	15	79	6,950	551	17,215

Appendix II (Cont.)

WESTERN LOS ANGELES L.A.R.T.S. PROGRAM AREA IN ACRES BY LAND USE - 1960

		Residential		Commercial				Community Services	
Community	Total Acreage	Singles	Mult.	Retail	Whsl	Offc	Pkg	Inst.	Recreation
Beverly Crest	5,084	1,234	0	0	0	0	0	0	0
Brentwood	1,137	629	93	38	2	6	1	16	144
Del Rey	1,342	607	83	16	10	3	1	21	0
Del Rey Palisades	1,252	240	13	6	0	3	16	0	209
Mar Vista	3,199	1,791	195	68	7	7	4	151	23
Pacific Palisades	26,932	4,588	42	41	0	4	2	173	604
Palms	3,104	1,525	194	106	12	13	7	79	339
Venice	2,144	812	96	83	17	4	12	62	167
Westchester	7,051	1,941	129	127	60	47	116	272	31
West Los Angeles	2,393	920	136	134	35	23	22	53	21
Westwood	2,488	905	228	50	5	7	14	475	331
TOTAL	56,126	15,192	1,209	669	148	117	195	1,302	1,869

LOS ANGELES CITY TOTALS

Community	Total Acreage	Singles	Mult.	Retail	Whsl	Offc	Pkg	Inst.	Recreation
Valley Area	137,638	47,070	1,246	2,508	535	186	258	3,176	5,082
Central Los Angeles	81,924	32,466	4,804	3,960	1,440	713	730	2,515	6,013
Western Los Angeles	56,126	15,192	1,209	669	148	117	195	1,302	1,869
Southern Los Angeles	17,346	3,832	402	457	334	64	82	564	604
TOTAL	293,034	98,560	7,661	7,594	2,457	1,080	1,265	7,557	13,568

Appendix II (Cont.)

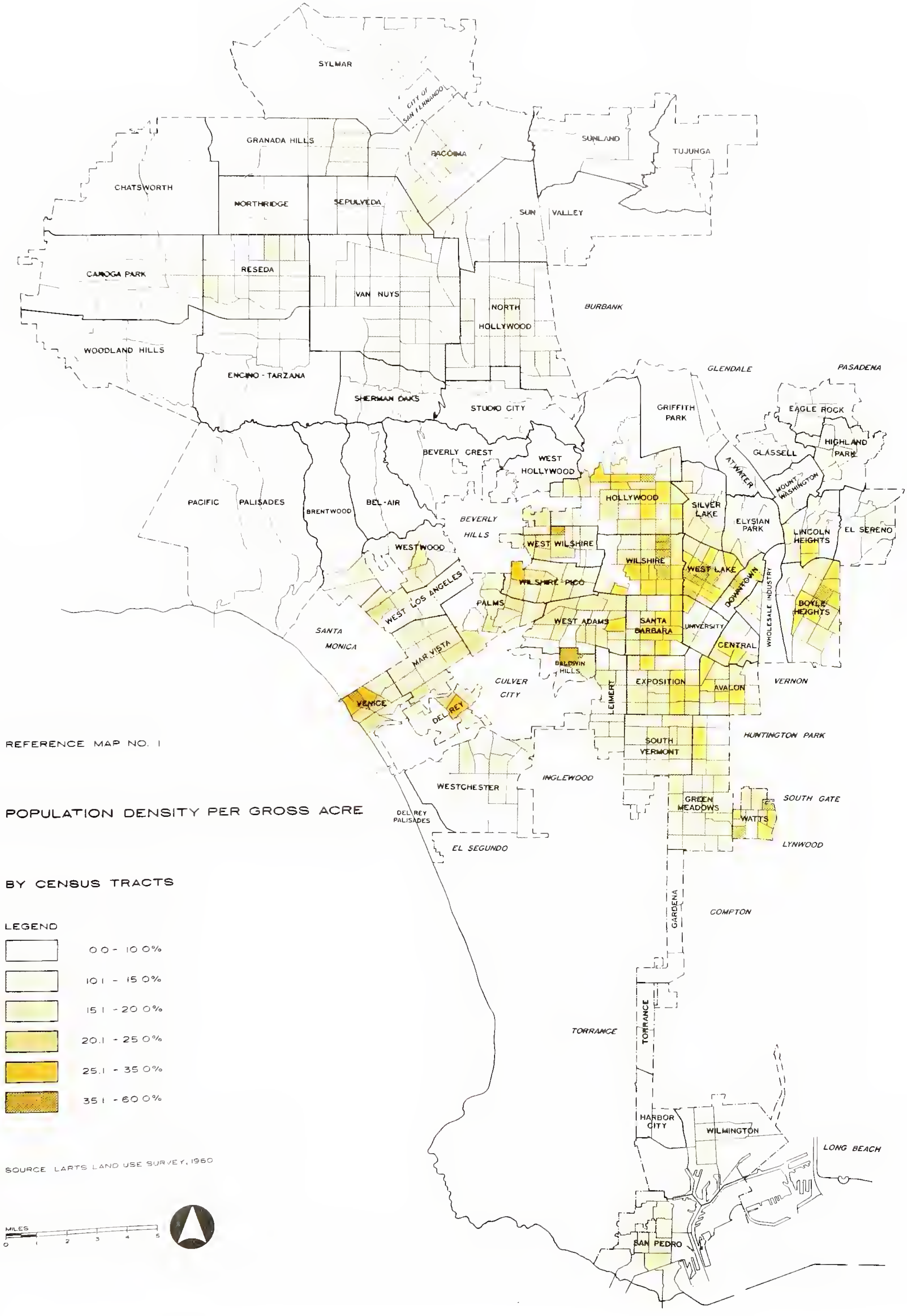
WESTERN LOS ANGELES L.A.R.T.S. PROGRAM AREA IN ACRES BY LAND USE - 1960

		Industrial					Open Land		
Community	Total Acreage	Land Demand	Other	Transp	Mil Instl	Agric	Vacant Useable	Vacant Nonuse	Street
Beverly Crest	5,084	164	0	0	1	13	3,457	8	207
Brentwood	1,137	0	1	0	0	0	7	0	200
Del Rey	1,342	16	45	8	0	187	46	30	269
Del Rey Palisades	1,252	103	112	400	7	0	21	5	117
Mar Vista	3,199	23	18	32	0	21	64	12	783
Pacific Palisades	26,932	14	0	0	4	32	20,064	128	1,236
Palms	3,104	45	45	24	0	5	51	10	649
Venice	2,144	106	16	11	0	0	214	68	476
Westchester	7,051	77	269	2,352	26	60	623	0	921
West Los Angeles	2,393	288	82	22	0	32	11	0	614
Westwood	2,488	1	0	4	0	0	3	0	465
TOTAL	56,126	837	588	2,853	38	350	24,561	261	5,937
			LOS ANGELES CITY TOTALS						
Valley Area	137,638	3,949	1,190	1,362	30	12,252	40,431	2,112	16,251
Central Los Angeles	81,924	1,487	1,927	1,058	15	79	6,950	551	17,215
Western Los Angeles	56,126	837	588	2,853	38	350	24,561	261	5,937
Southern Los Angeles	17,346	3,369	428	507	1,059	89	1,947	918	2,727
TOTAL	293,034	9,642	4,133	5,780	1,142	12,770	73,889	3,842	42,130

MAP SECTION

MAPS

1. Population Density Per Gross Acre
2. Population Density Per Net Acre
3. Residential Acreage
4. Multiple Family Residential Acreage
5. Commercial Acreage
6. Retail and Service Acreage
7. Office Acreage
8. Wholesale Acreage
9. All Industrial Acreage
10. Land Demanding Industrial
11. Industrial Acreage Other than Land Demanding
12. Agricultural Acreage
13. Recreational Acreage
14. Street Acreage
15. Transportation Acreage
16. Institutional Acreage
17. Military Acreage
18. Usable Vacant Acreage



REFERENCE MAP NO. 1

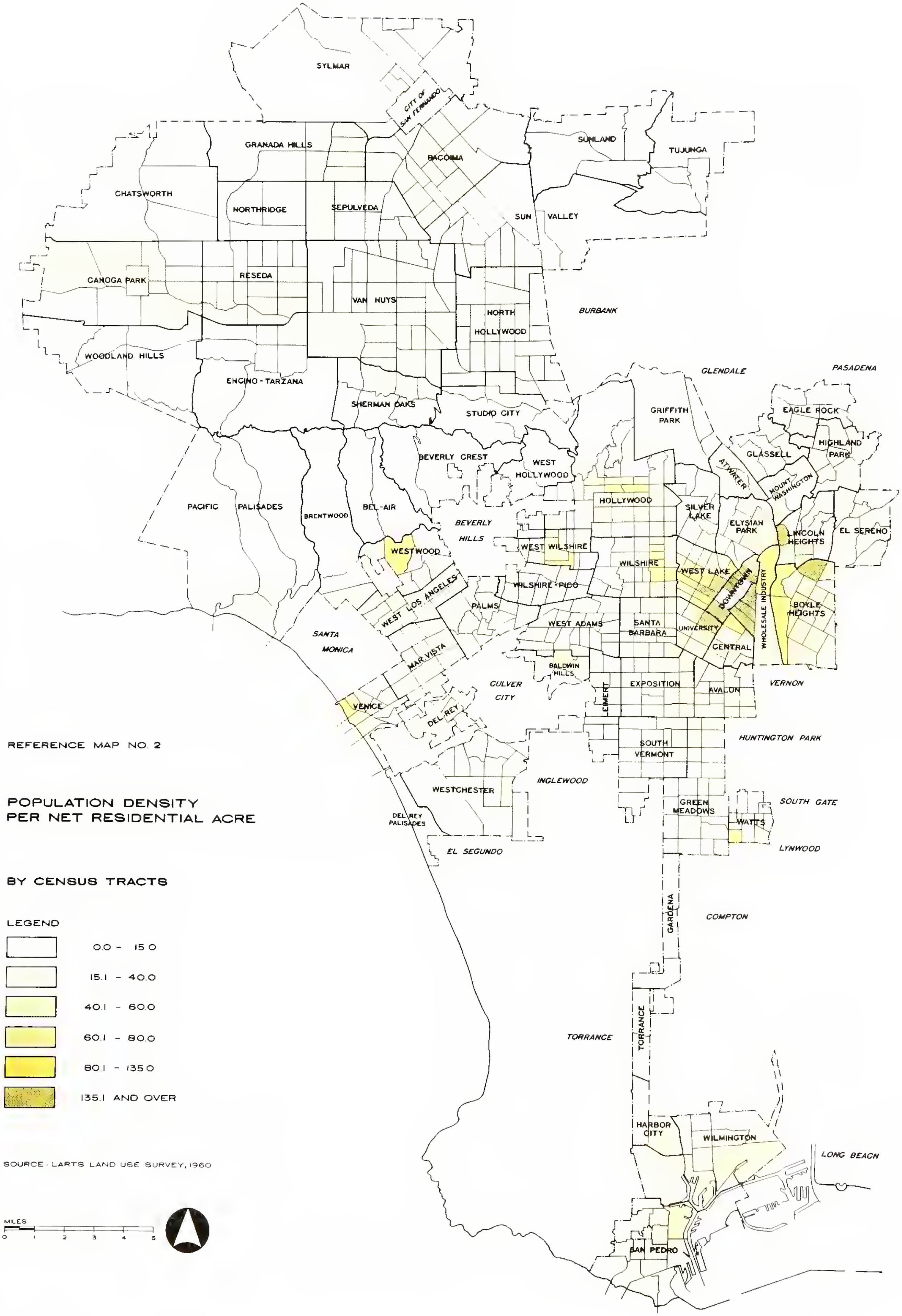
POPULATION DENSITY PER GROSS ACRE

BY CENSUS TRACTS

LEGEND

☐	0.0 - 10.0%
☐	10.1 - 15.0%
▨	15.1 - 20.0%
▨	20.1 - 25.0%
■	25.1 - 35.0%
▩	35.1 - 60.0%

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 2

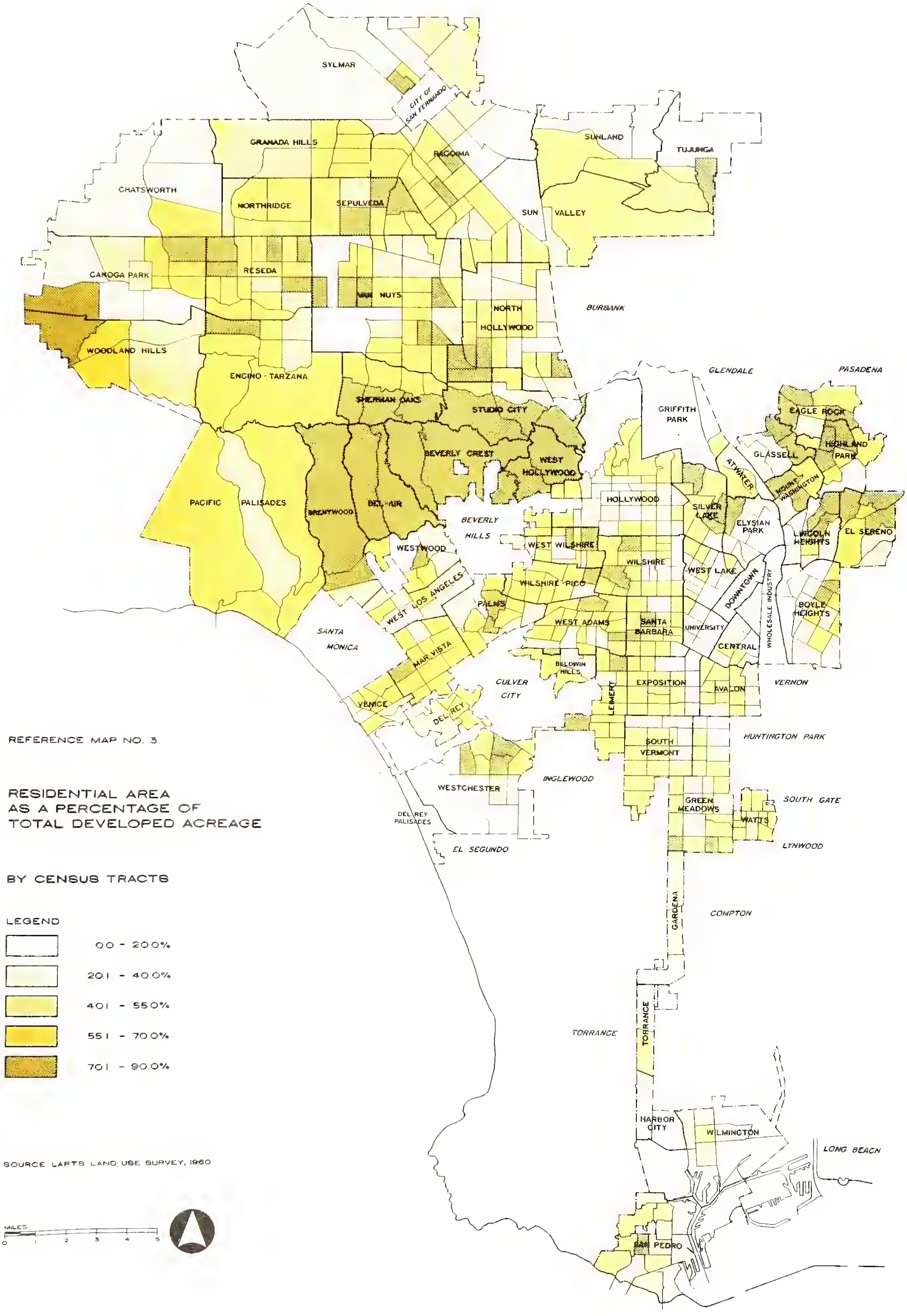
POPULATION DENSITY PER NET RESIDENTIAL ACRE

BY CENSUS TRACTS

LEGEND

☐	0.0 - 15.0
☐	15.1 - 40.0
☐	40.1 - 60.0
☐	60.1 - 80.0
☐	80.1 - 135.0
▨	135.1 AND OVER

SOURCE - LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 3

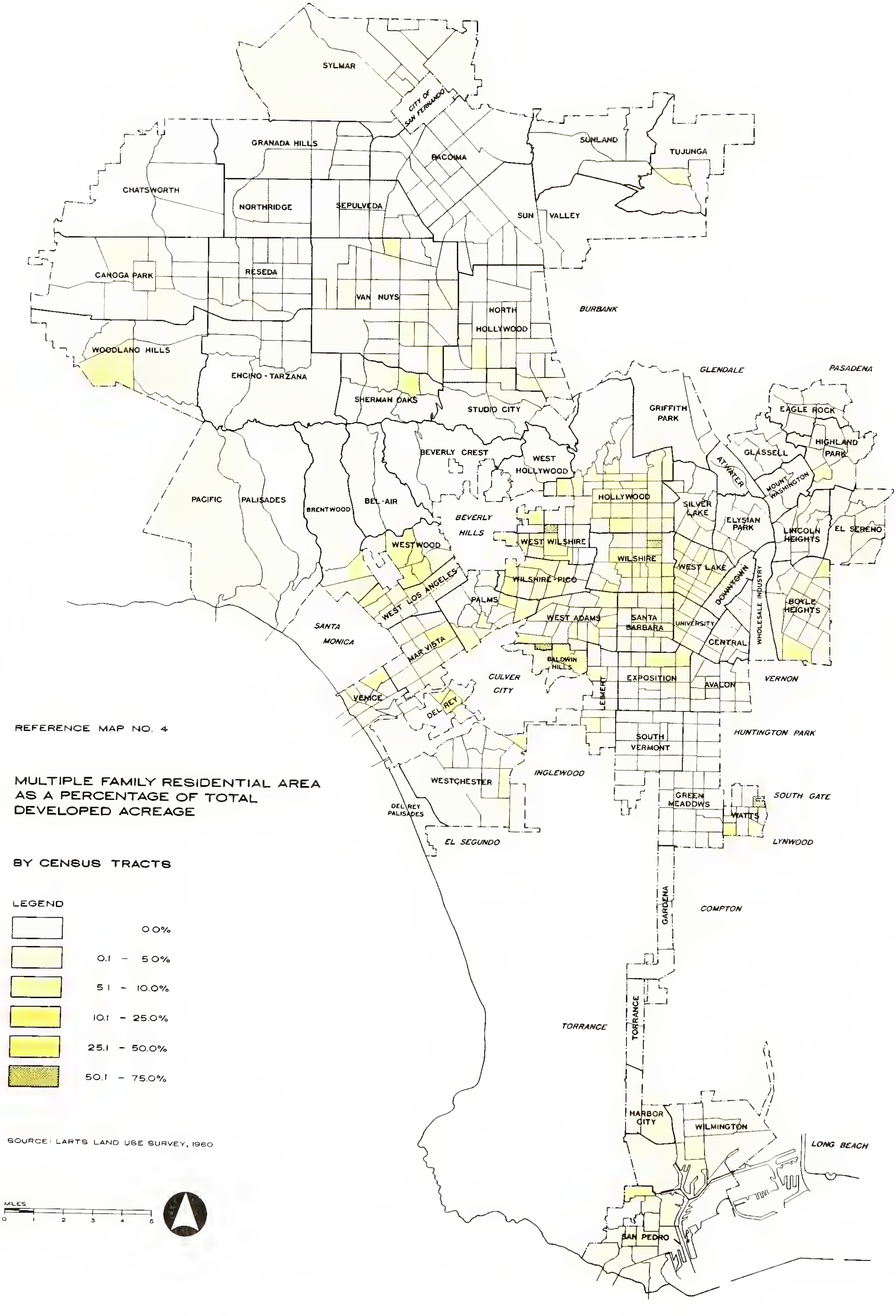
RESIDENTIAL AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0 - 20.0%
▨	20.1 - 40.0%
▨	40.1 - 55.0%
▨	55.1 - 70.0%
▨	70.1 - 90.0%

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 4

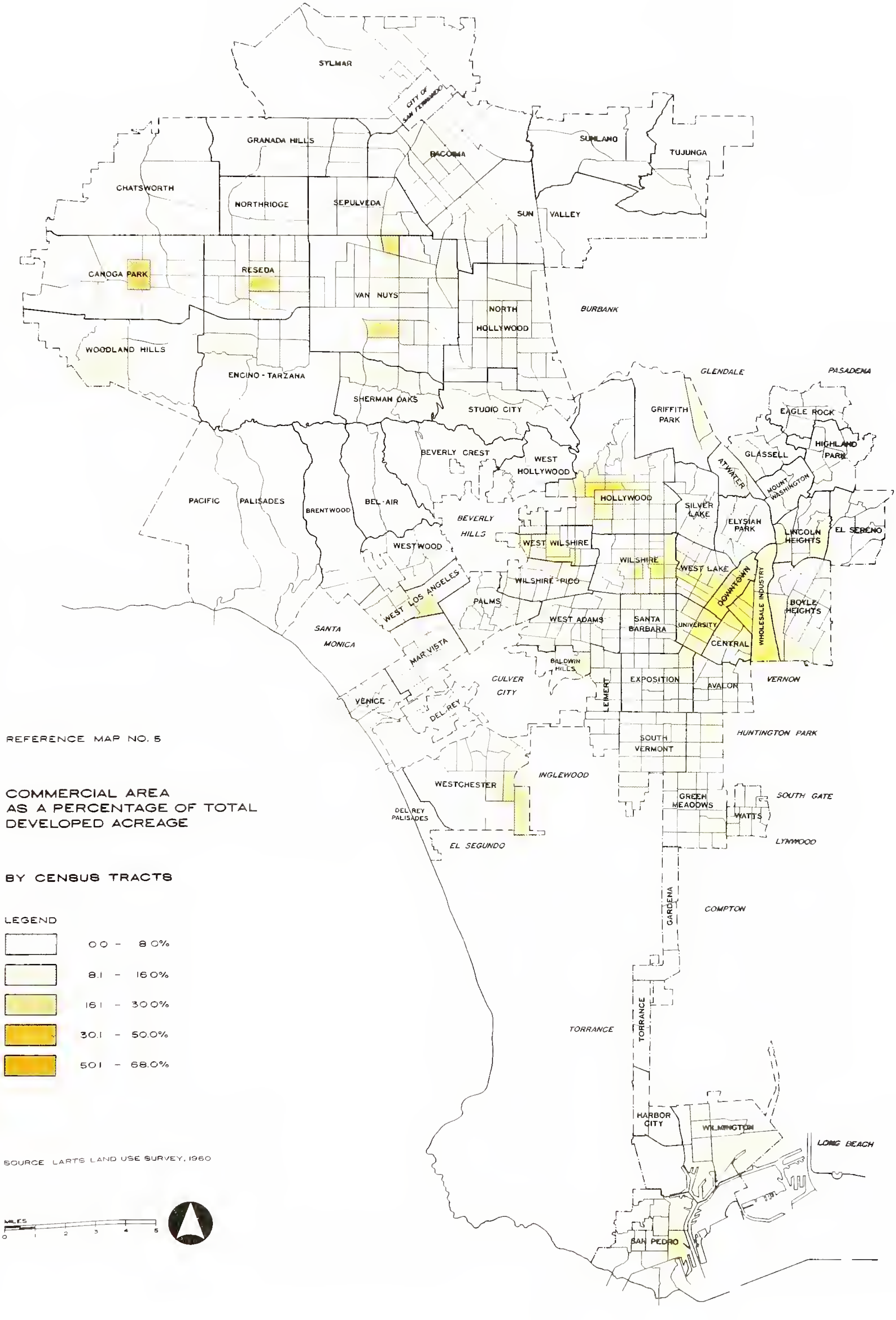
MULTIPLE FAMILY RESIDENTIAL AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

0.0%
0.1 - 5.0%
5.1 - 10.0%
10.1 - 25.0%
25.1 - 50.0%
50.1 - 75.0%

SOURCE: LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 5

COMMERCIAL AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

⬜ 0.0 - 8.0%

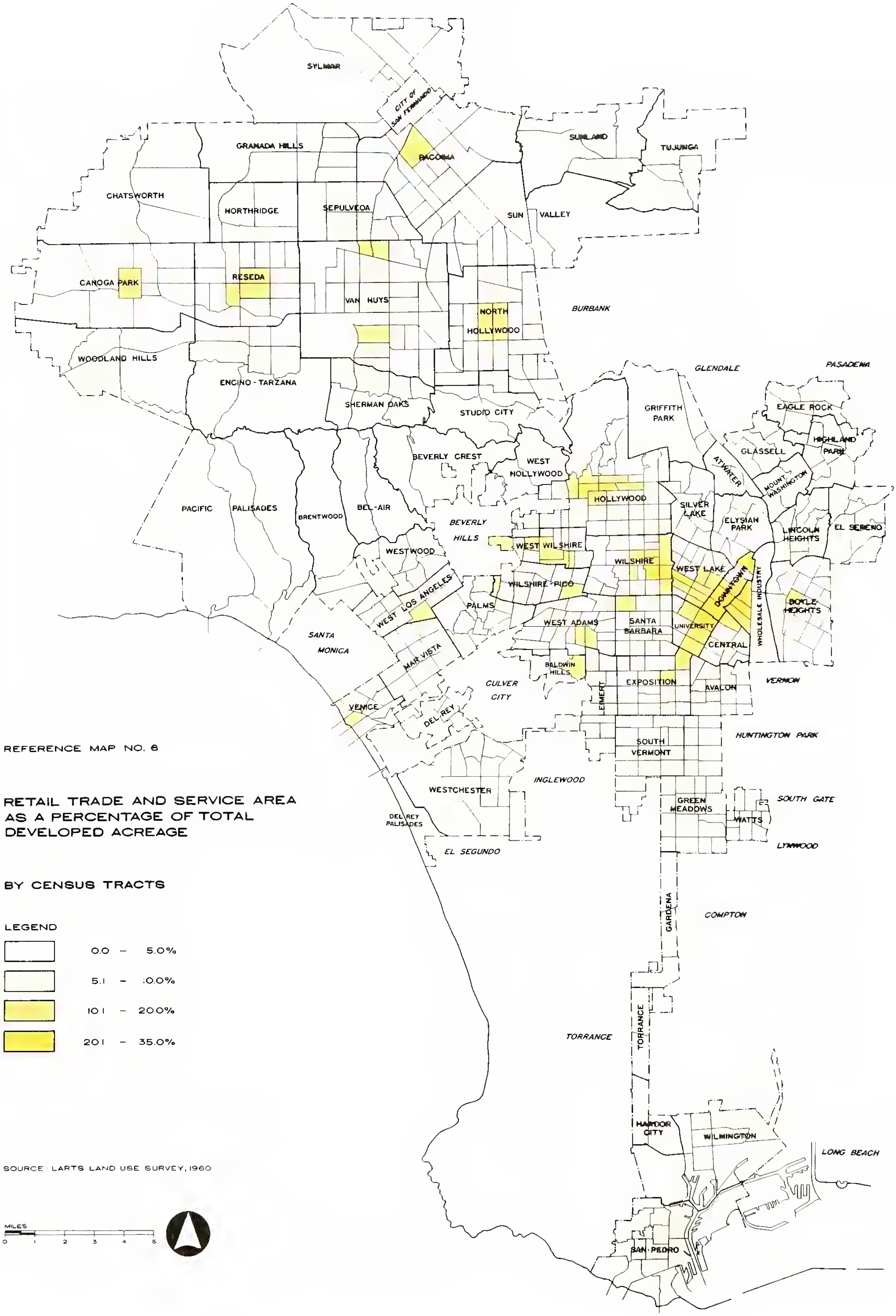
⬜ 8.1 - 16.0%

🟨 16.1 - 30.0%

🟧 30.1 - 50.0%

🟧 50.1 - 68.0%

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 6

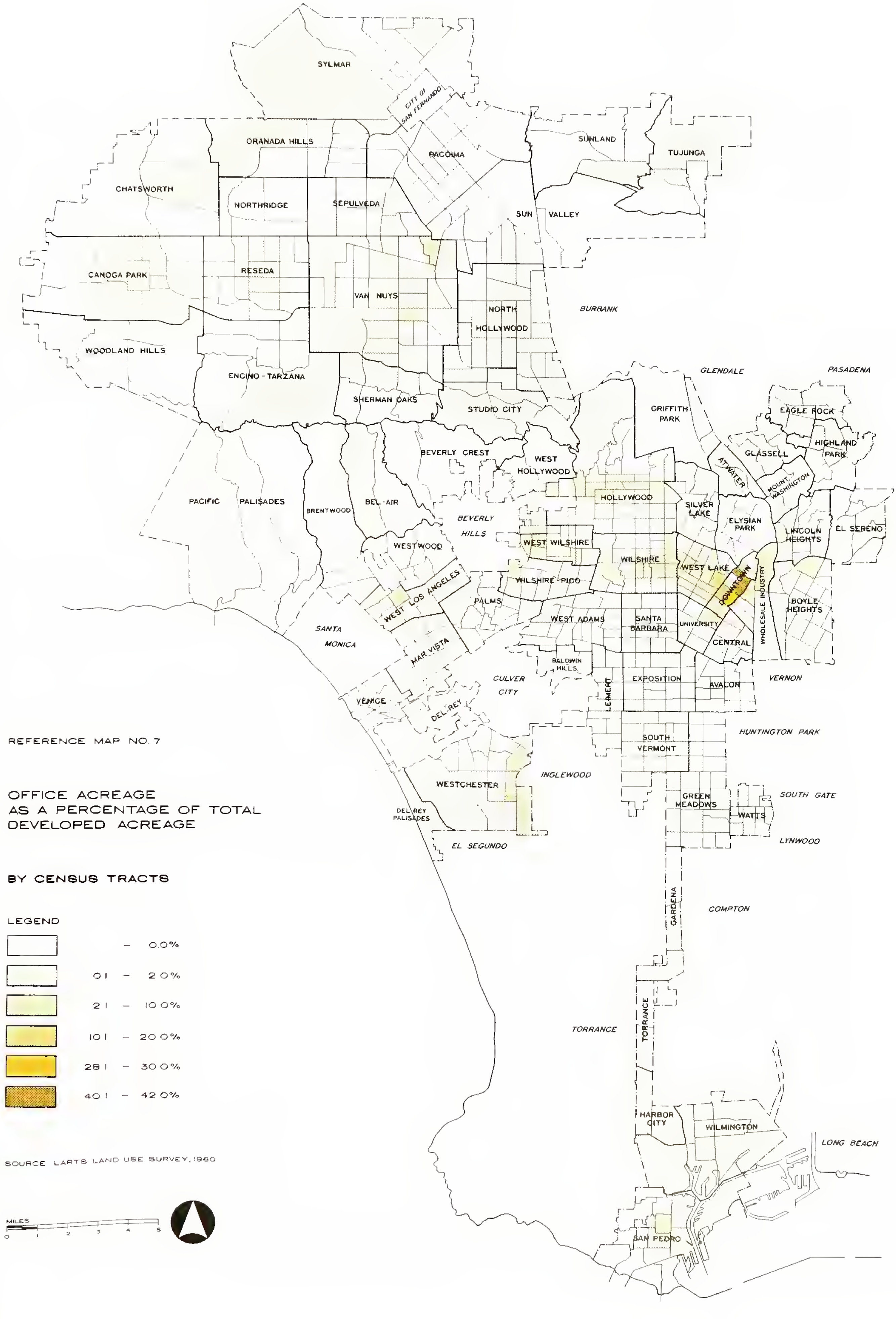
RETAIL TRADE AND SERVICE AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0 – 5.0%
☐	5.1 – 10.0%
▨	10.1 – 20.0%
■	20.1 – 35.0%

SOURCE: LARTS LAND USE SURVEY, 1960

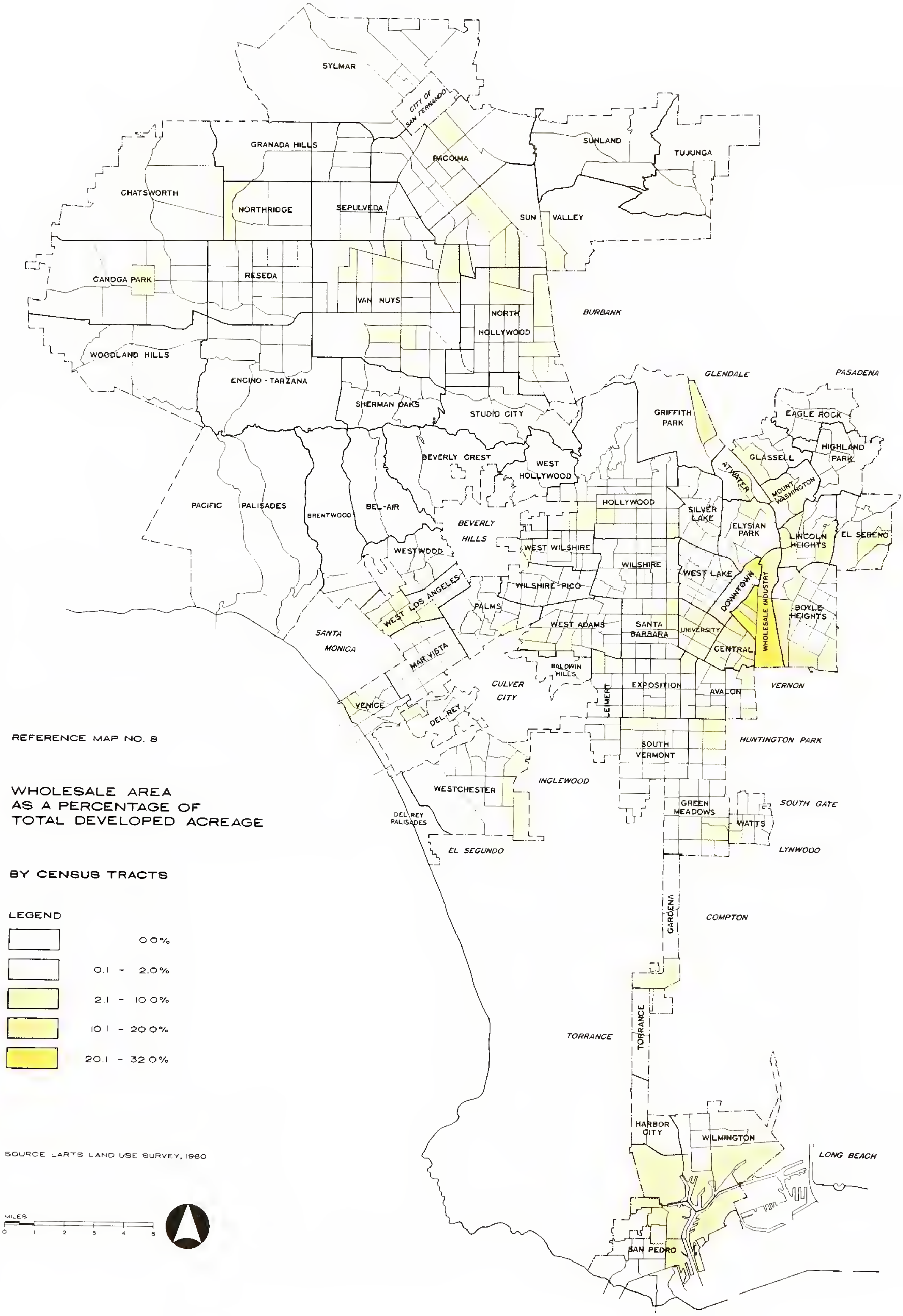


REFERENCE MAP NO. 7

OFFICE ACREAGE AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 8

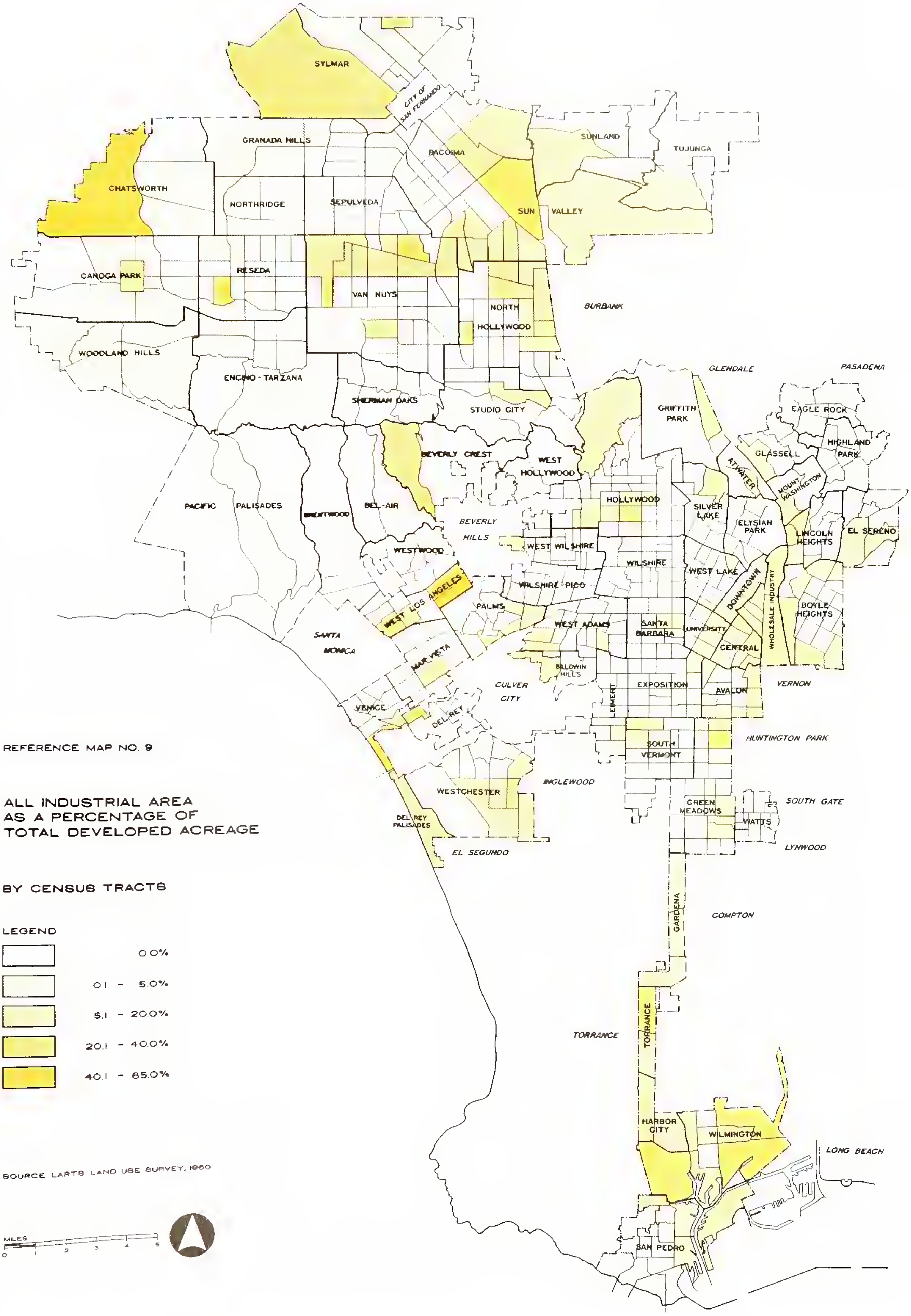
WHOLESALE AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0%
☐	0.1 - 2.0%
🟨	2.1 - 10.0%
🟨	10.1 - 20.0%
🟨	20.1 - 32.0%

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 9

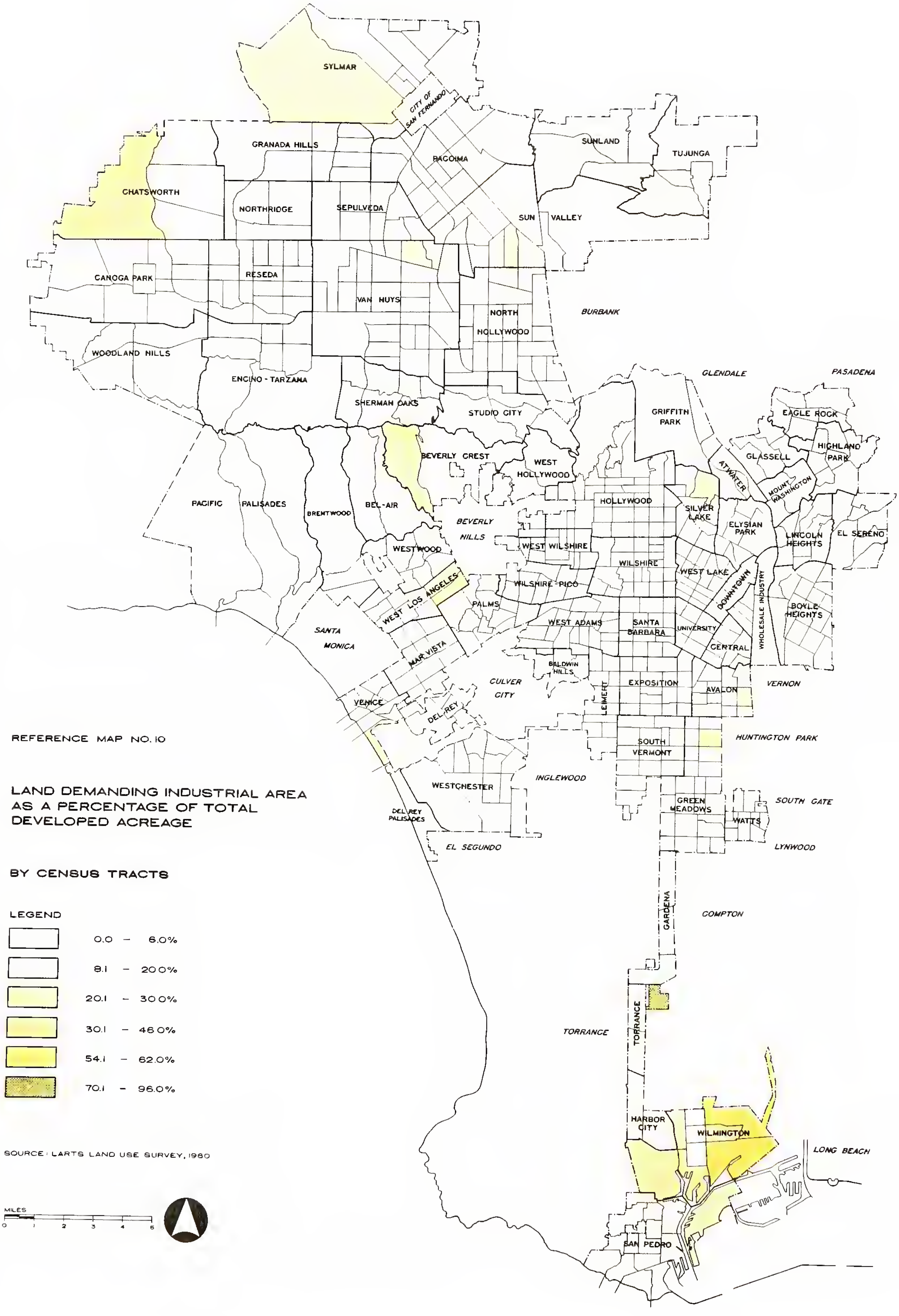
ALL INDUSTRIAL AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐ 0.0%
☐ 0.1 - 5.0%
☐ 5.1 - 20.0%
☐ 20.1 - 40.0%
☐ 40.1 - 65.0%

SOURCE LARTS LAND USE SURVEY, 1960

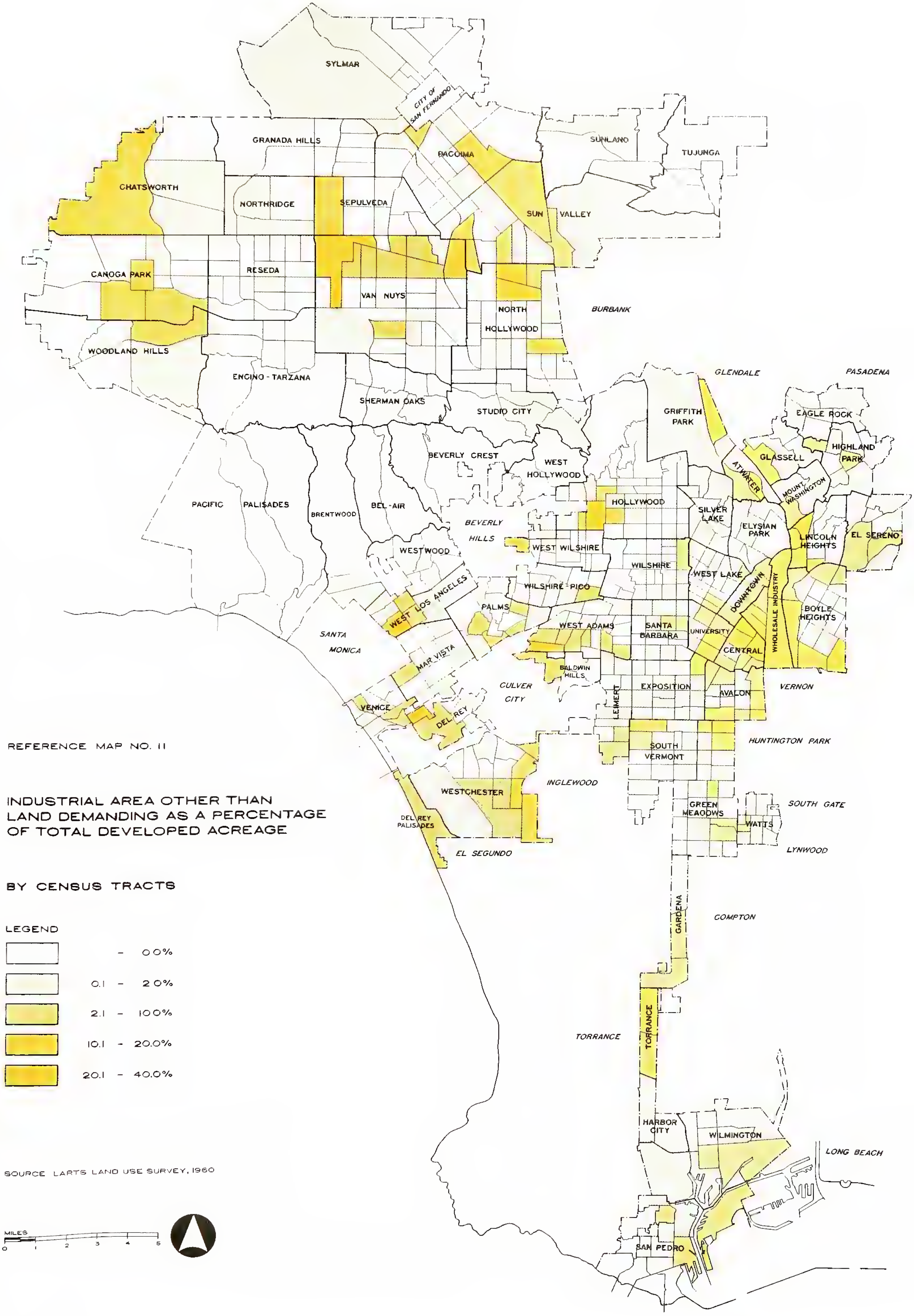


REFERENCE MAP NO. 10

LAND DEMANDING INDUSTRIAL AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

SOURCE: LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 11

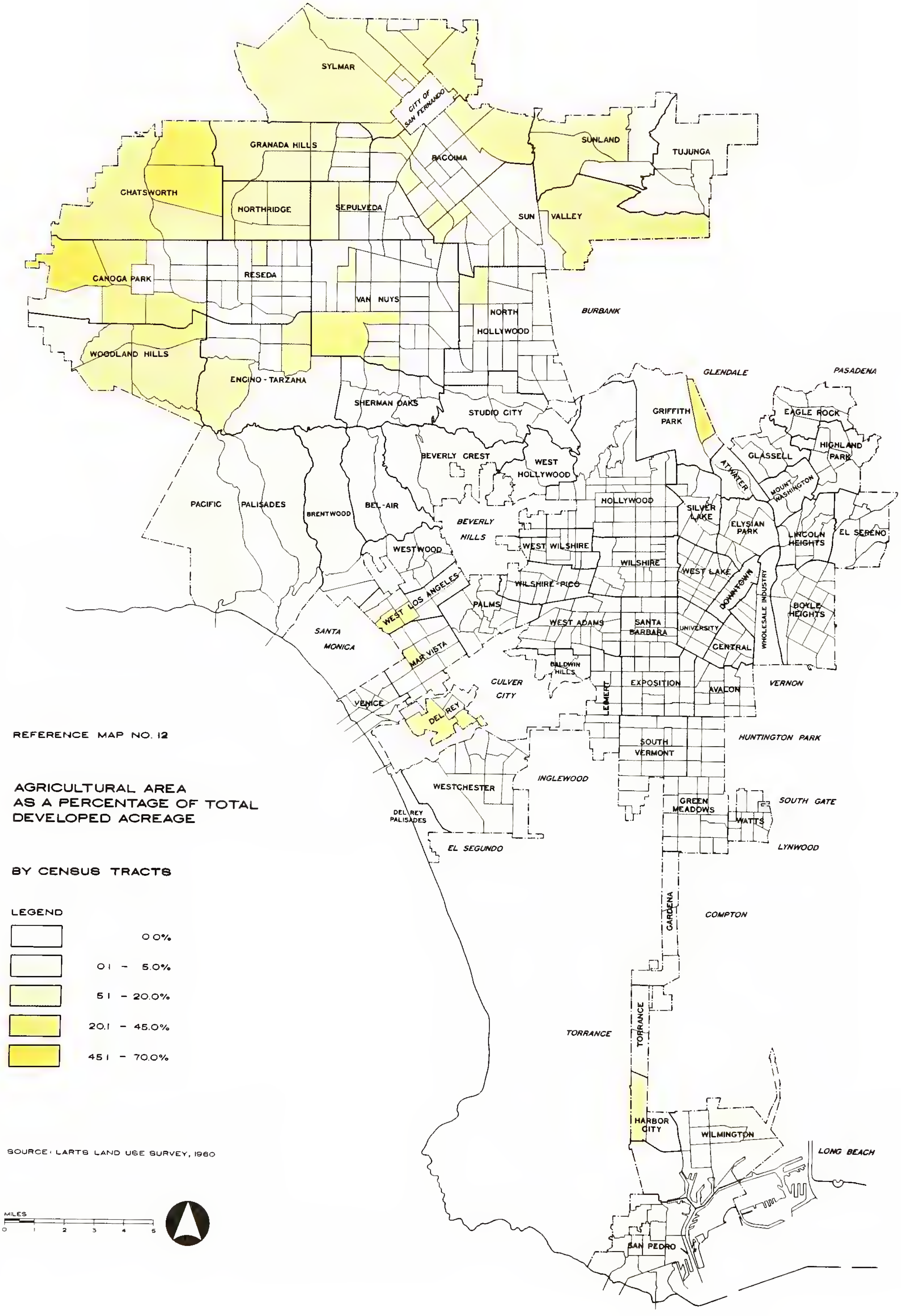
INDUSTRIAL AREA OTHER THAN LAND DEMANDING AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	- 0.0%
▨	0.1 - 2.0%
▨	2.1 - 10.0%
▨	10.1 - 20.0%
▨	20.1 - 40.0%

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 12

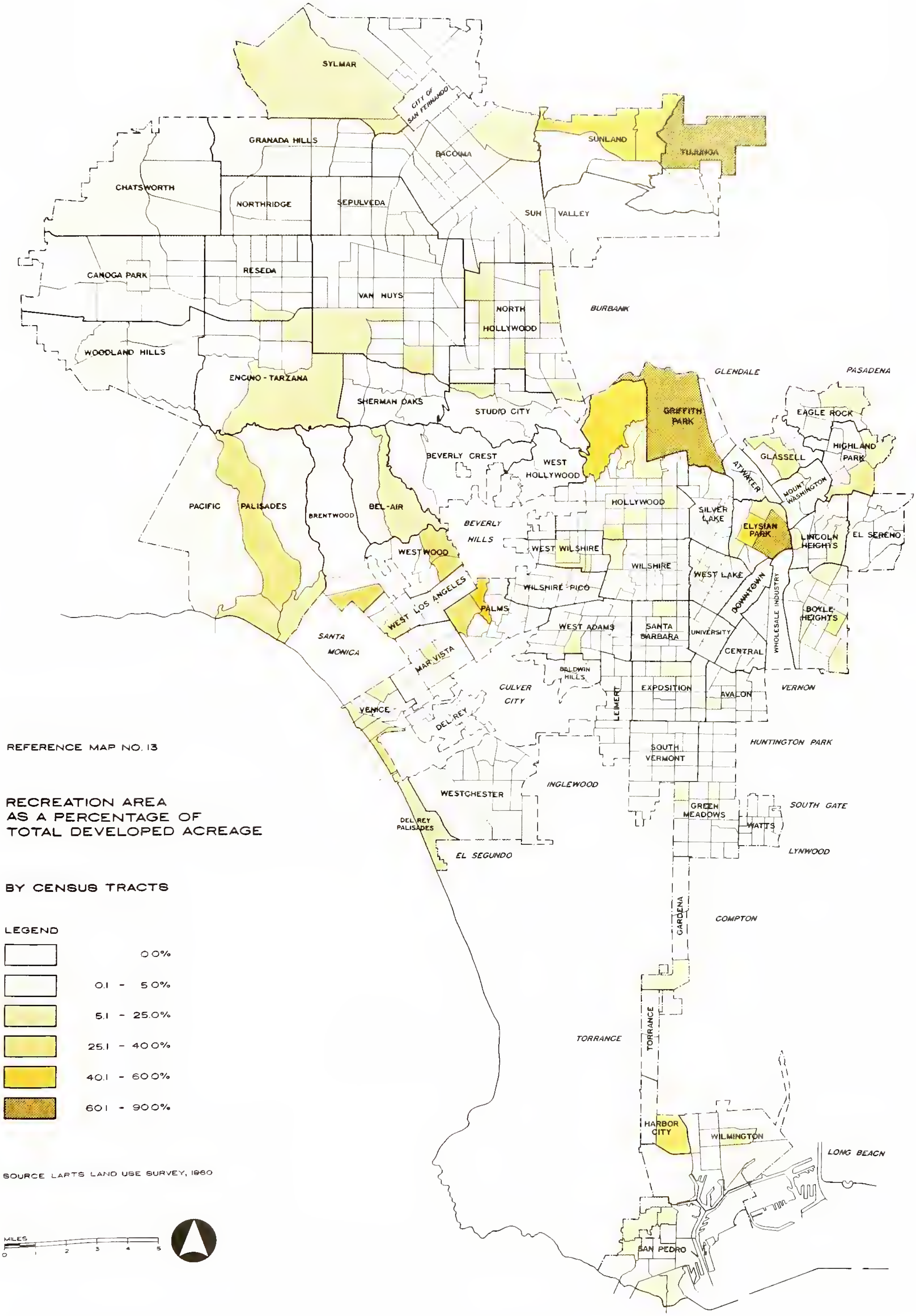
AGRICULTURAL AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

0.0%
0.1 - 5.0%
5.1 - 20.0%
20.1 - 45.0%
45.1 - 70.0%

SOURCE: LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 13

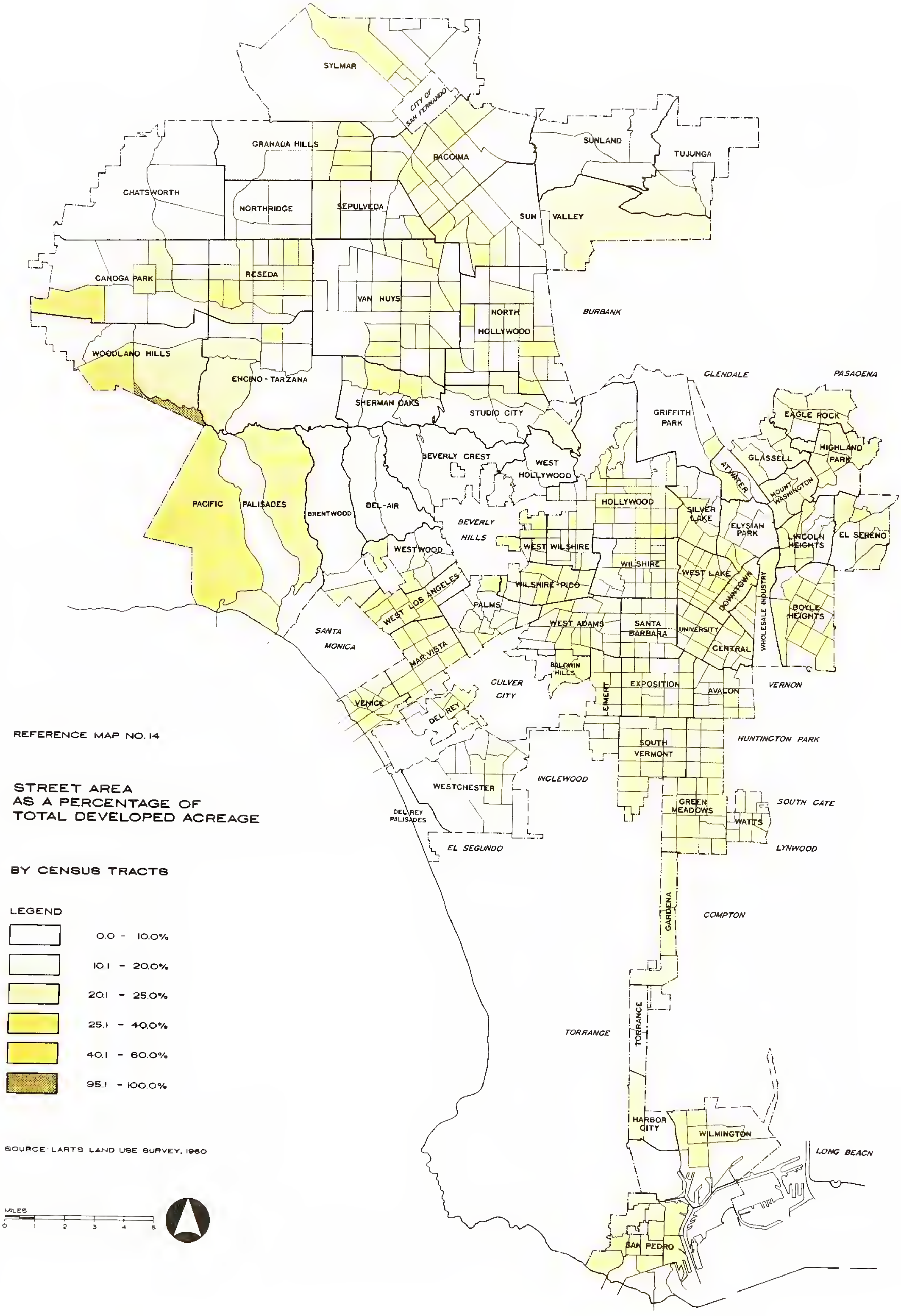
RECREATION AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0%
☐	0.1 - 5.0%
▨	5.1 - 25.0%
▨	25.1 - 40.0%
▨	40.1 - 60.0%
▨	60.1 - 90.0%

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 14

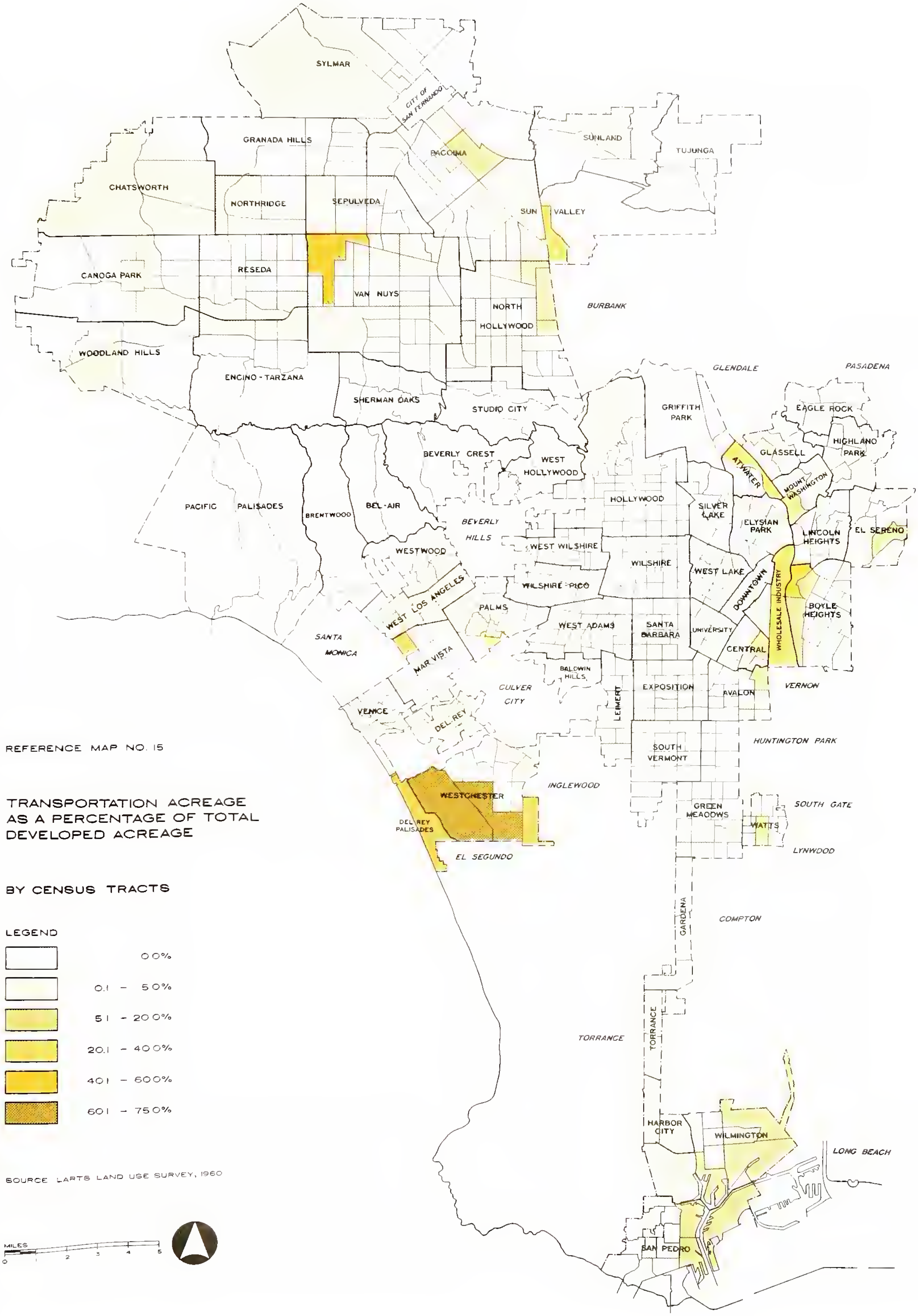
STREET AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0 - 10.0%
☐	10.1 - 20.0%
🟨	20.1 - 25.0%
🟨	25.1 - 40.0%
🟨	40.1 - 60.0%
▨	95.1 - 100.0%

SOURCE: LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 15

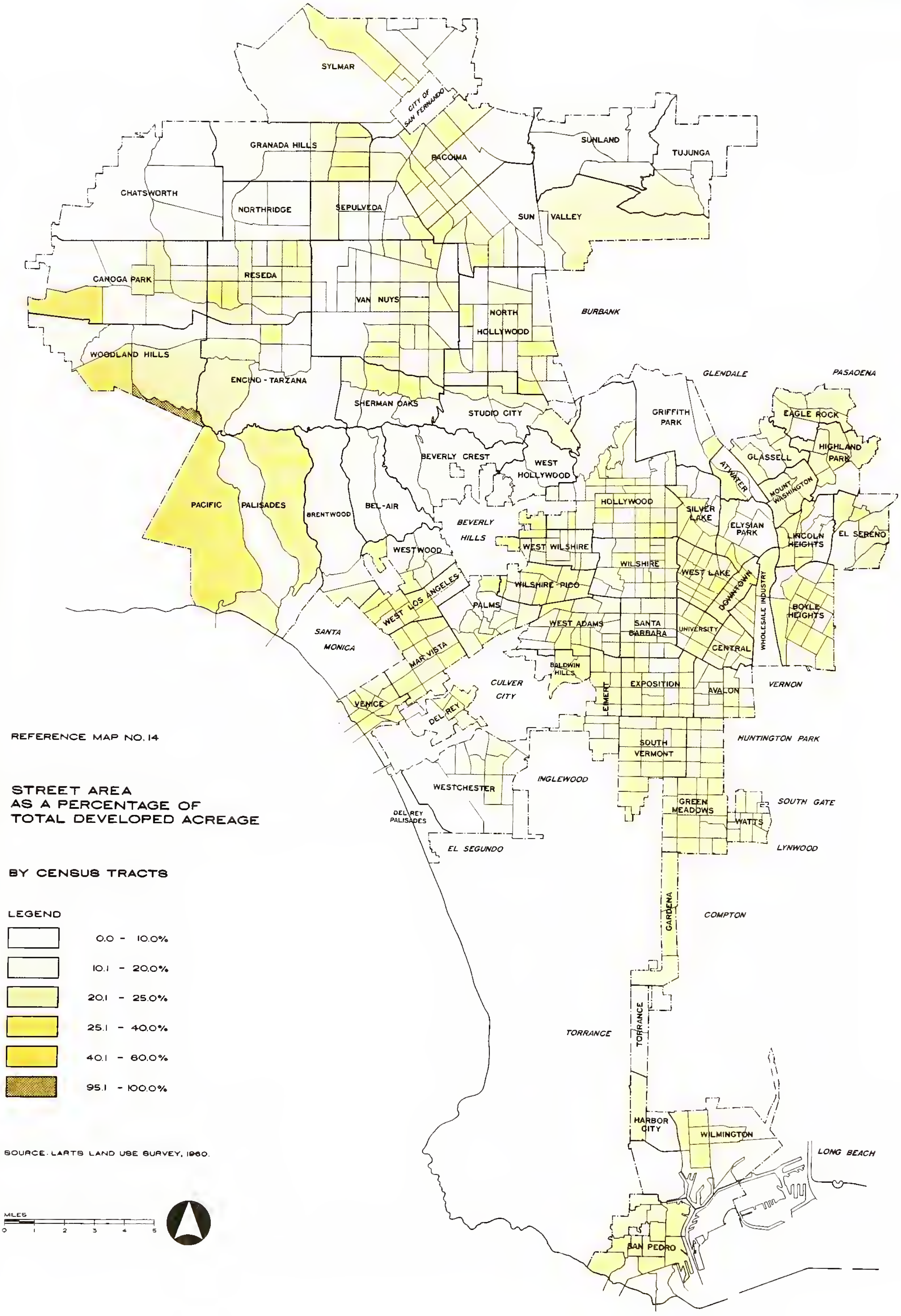
TRANSPORTATION ACREAGE AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐ 0.0%
☐ 0.1 - 5.0%
▨ 5.1 - 20.0%
▨ 20.1 - 40.0%
▨ 40.1 - 60.0%
▨ 60.1 - 75.0%

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 14

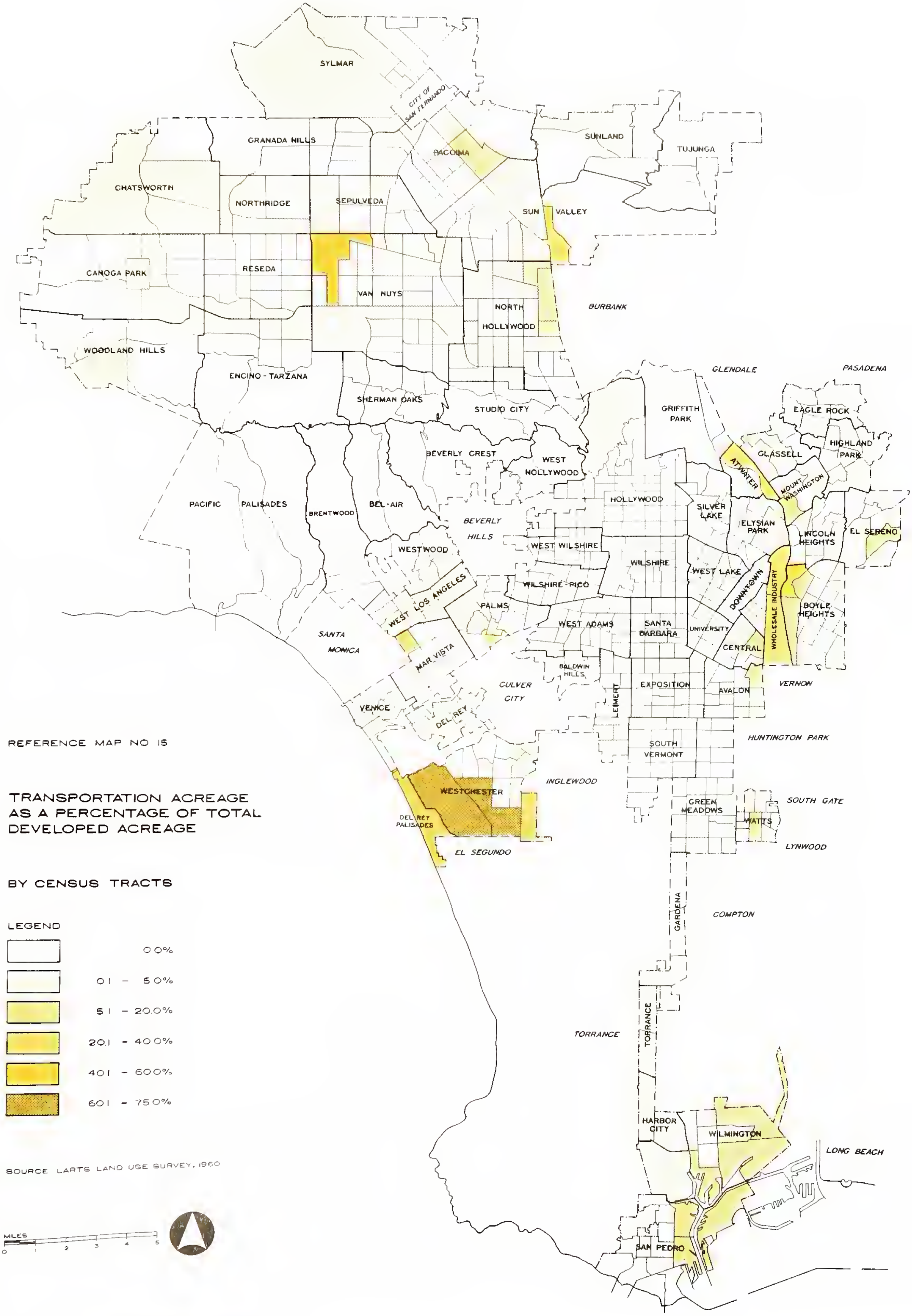
STREET AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0 - 10.0%
☐	10.1 - 20.0%
☐	20.1 - 25.0%
☐	25.1 - 40.0%
☐	40.1 - 60.0%
▨	95.1 - 100.0%

SOURCE- LARTS LAND USE SURVEY, 1960.



REFERENCE MAP NO 15

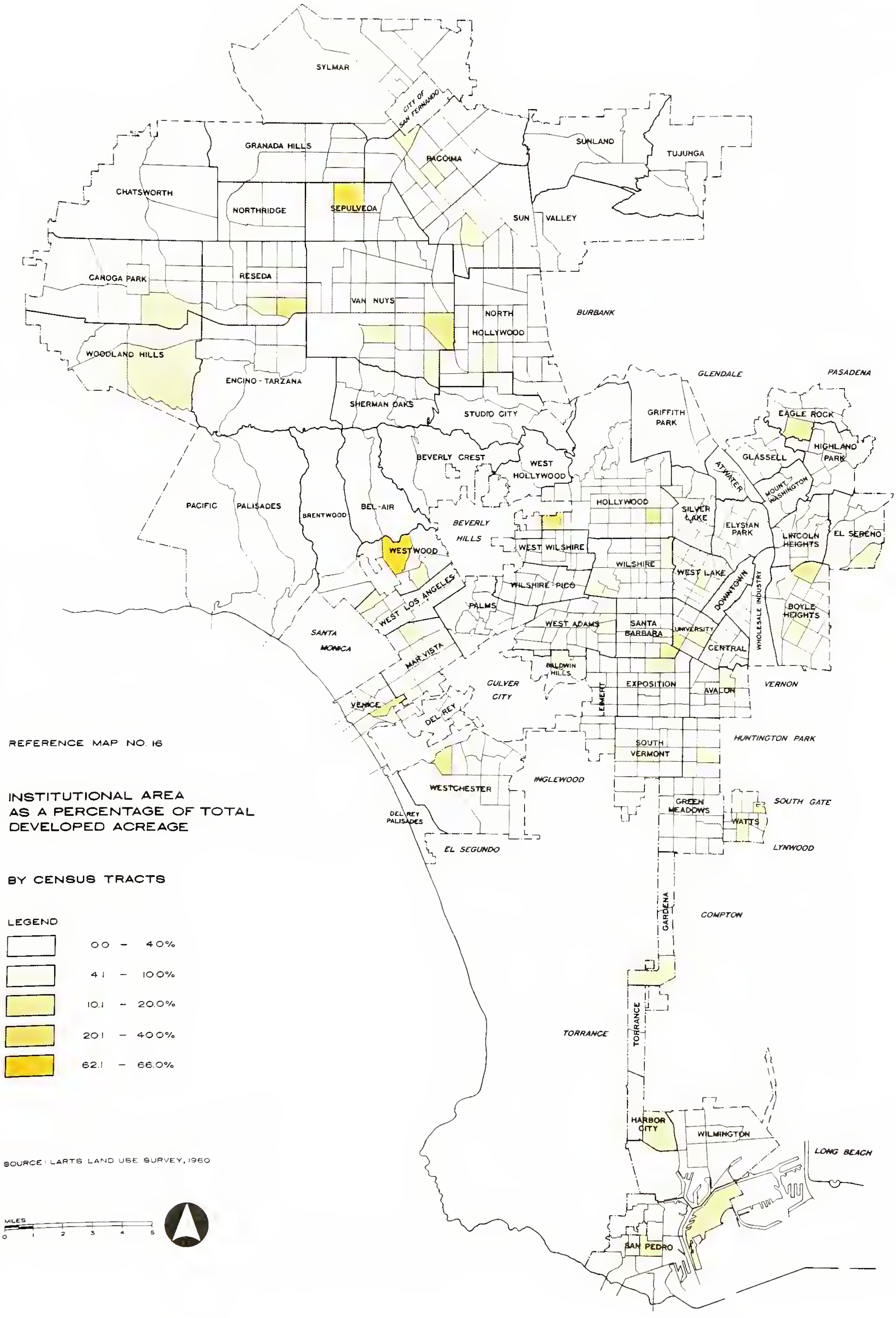
TRANSPORTATION ACREAGE AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0%
☐	0.1 - 5.0%
▨	5.1 - 20.0%
▨	20.1 - 40.0%
▨	40.1 - 60.0%
▨	60.1 - 75.0%

SOURCE LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 16

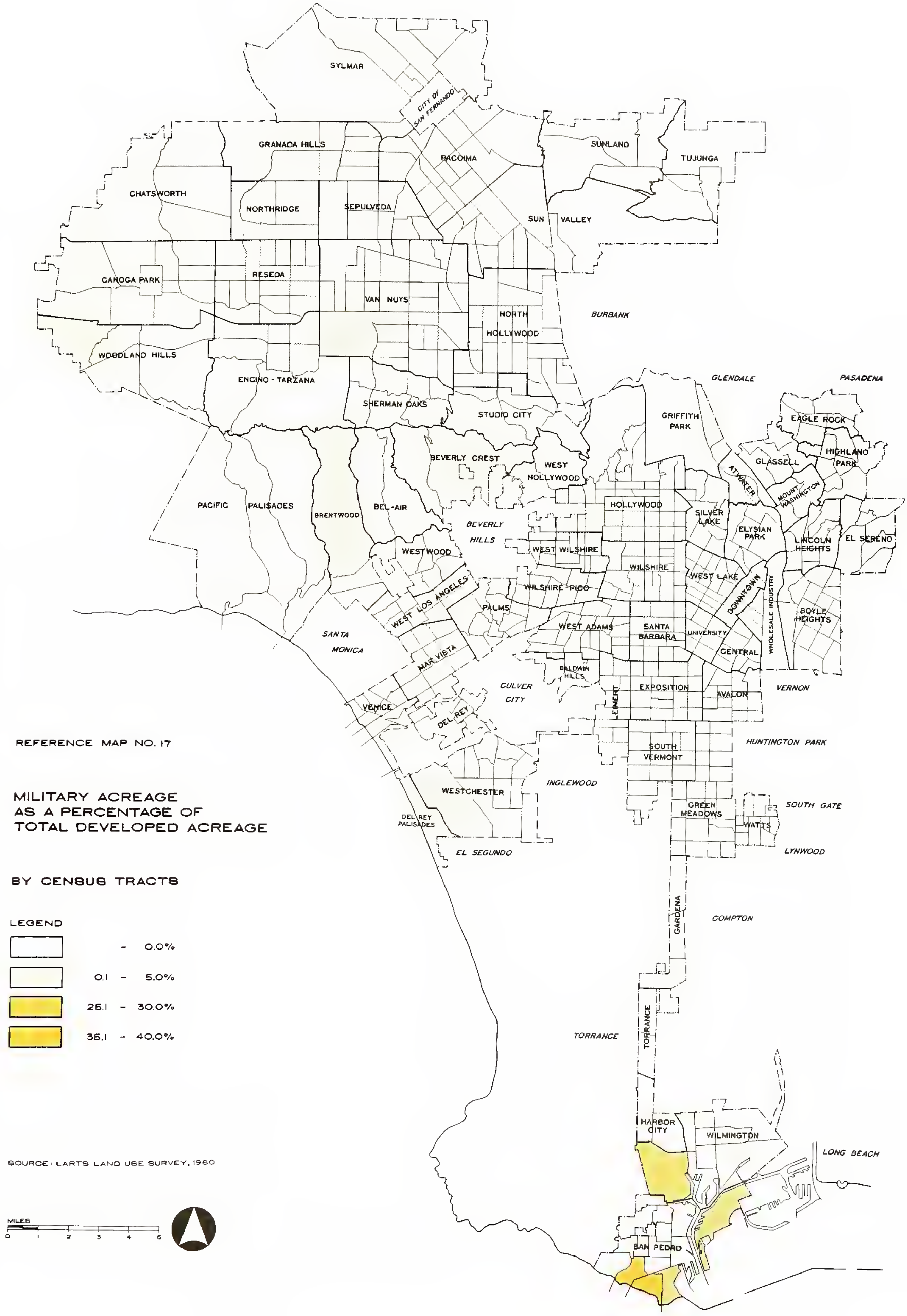
INSTITUTIONAL AREA AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0 - 4.0%
▨	4.1 - 10.0%
▨	10.1 - 20.0%
▨	20.1 - 40.0%
▨	62.1 - 66.0%

SOURCE: LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO. 17

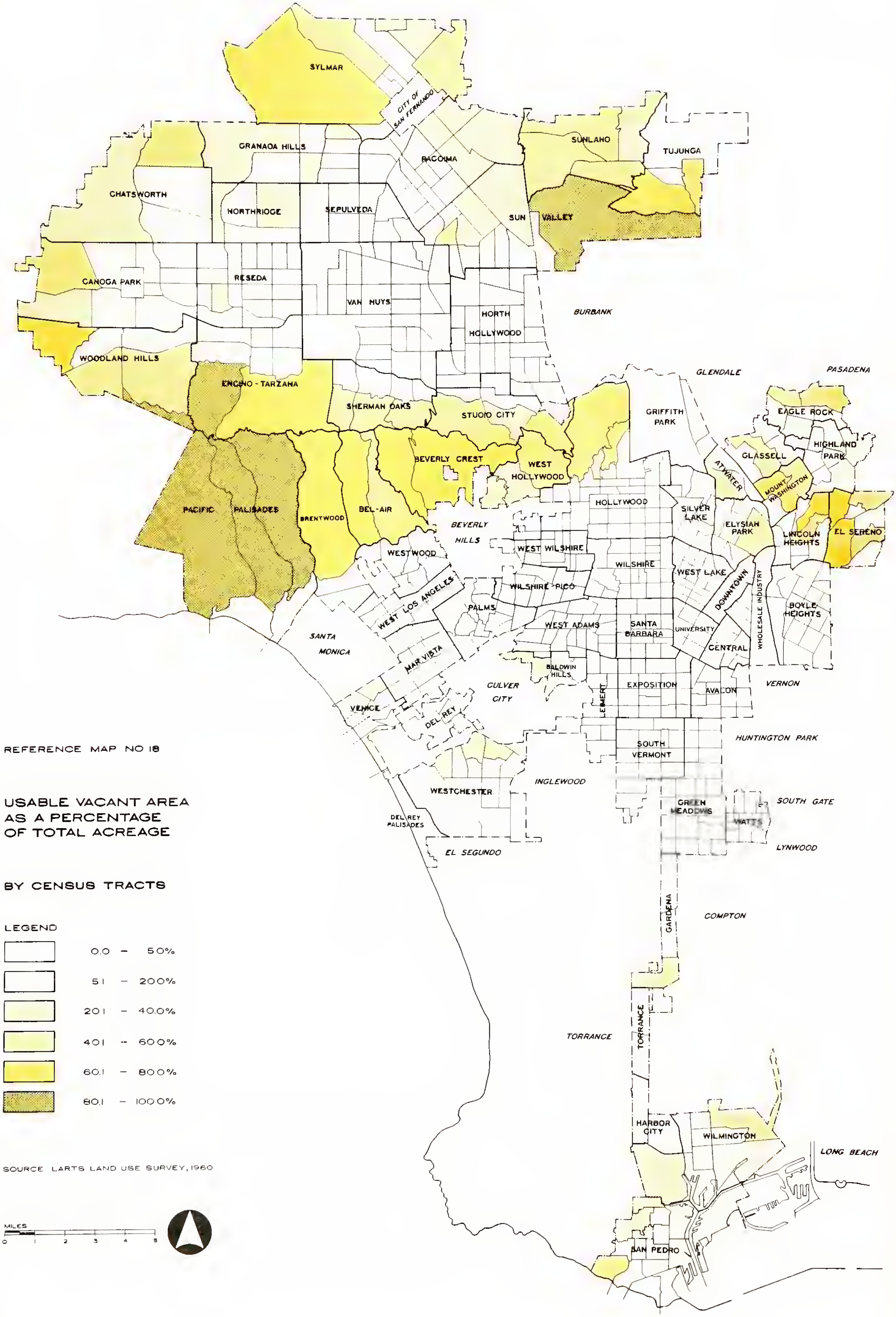
MILITARY ACREAGE AS A PERCENTAGE OF TOTAL DEVELOPED ACREAGE

BY CENSUS TRACTS

LEGEND

☐	- 0.0%
☐	0.1 - 5.0%
🟨	25.1 - 30.0%
🟨	35.1 - 40.0%

SOURCE: LARTS LAND USE SURVEY, 1960



REFERENCE MAP NO 18

USABLE VACANT AREA AS A PERCENTAGE OF TOTAL ACREAGE

BY CENSUS TRACTS

LEGEND

☐	0.0 – 5.0%
☐	5.1 – 20.0%
☐	20.1 – 40.0%
☐	40.1 – 60.0%
☐	60.1 – 80.0%
▨	80.1 – 100.0%

SOURCE LARTS LAND USE SURVEY, 1960

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